S. HRG. 102-208, PT. 1

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 1992

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

UNITED STATES SENATE

ONE HUNDRED SECOND CONGRESS

FIRST SESSION

ON

H.R. 2427

AN ACT MAKING APPROPRIATIONS FOR ENERGY AND WATER DEVELOPMENT FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 1992, AND FOR OTHER PURPOSES

PART 1 (Pages 1–337)

DEPARTMENT OF THE ARMY—CIVIL
Corps of Engineers—Civil
DEPARTMENT OF ENERGY

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ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 1992

TUESDAY, MAY 7, 1991

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 2 p.m., in room SD–116, Dirksen Senate Office Building, Hon. J. Bennett Johnston (chairman) presiding.

Present: Senators Johnston, Domenici, and Specter.

DEPARTMENT OF ENERGY

ATOMIC ENERGY DEFENSE ACTIVITIES

STATEMENT OF RICHARD A. CLAYTOR, ASSISTANT SECRETARY FOR DEFENSE PROGRAMS

OPENING REMARKS

Senator JOHNSTON. Today, the subcommittee begins its review of the fiscal year 1992 budget request for the Department of Energy. This afternoon, we will receive testimony on atomic energy defense activities from Richard A. Claytor, Assistant Secretary for Defense Programs for the Department of Energy, followed by Dr. Robert Barker, Assistant to the Secretary of Defense for Atomic Energy, Department of Defense.

Then, we will hear from Dr. Dominic J. Monetta, Director of the Office of New Production Reactors for the Department of Energy.

Before proceeding, I want to extend a special welcome to you, Mr. Claytor. This is your first appearance here to testify in support of these important national security programs, and we look forward to your remarks today and to working with you in the future.

I also want to recognize Admiral Barr. This is, I believe, your final visit before the subcommittee. We want to thank you for your hard work over the past several years, Admiral Barr, and we wish you the best in the future.

Admiral BARR. Thank you, sir.

Senator JOHNSTON. This is a closed, classified hearing. So I must ask everyone who does not have a Q clearance to leave at this time. Is everyone here Q cleared?

[Pause.]

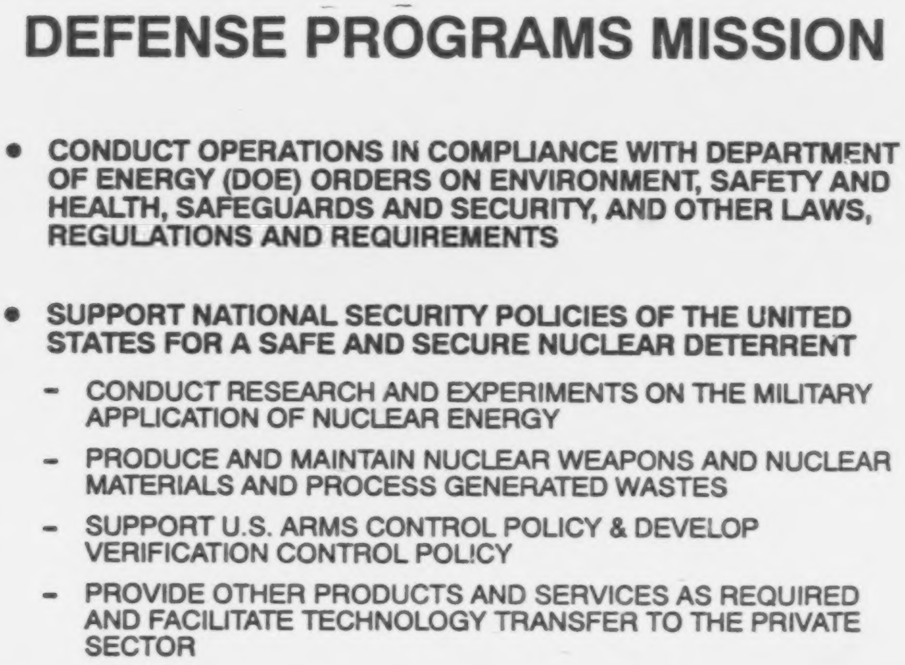
Senator JOHNSTON. I expect a series of votes on the Senate floor starting at around 2:15. So we will have to work around that.

With that, Mr. Claytor, please proceed. Your full statement will be placed in the record.

MISSION OVERVIEW

Mr. CLAYTOR. Sir, I am very pleased to appear before you today to discuss the fiscal year 1992 defense programs appropriations request for $6.7 billion.

My oral remarks are based on a handout which I have distributed. But I am going to use the slides shown on the screen.



DEFENSE PROGRAMS MISSION

- CONDUCT OPERATIONS IN COMPLIANCE WITH DEPARTMENT OF ENERGY (DOE) ORDERS ON ENVIRONMENT, SAFETY AND HEALTH, SAFEGUARDS AND SECURITY, AND OTHER LAWS, REGULATIONS AND REQUIREMENTS
- SUPPORT NATIONAL SECURITY POLICIES OF THE UNITED STATES FOR A SAFE AND SECURE NUCLEAR DETERRENT
  - CONDUCT RESEARCH AND EXPERIMENTS ON THE MILITARY APPLICATION OF NUCLEAR ENERGY
  - PRODUCE AND MAINTAIN NUCLEAR WEAPONS AND NUCLEAR MATERIALS AND PROCESS GENERATED WASTES
  - SUPPORT U.S. ARMS CONTROL POLICY & DEVELOP VERIFICATION CONTROL POLICY
  - PROVIDE OTHER PRODUCTS AND SERVICES AS REQUIRED AND FACILITATE TECHNOLOGY TRANSFER TO THE PRIVATE SECTOR

Beginning with defense programs mission it is our long-standing statutory mission to support national security policies of the United States by providing a safe and secure nuclear deterrent. However, we must conduct our operations in full compliance with laws and regulations, emphasizing health, safety, and the environment, and safeguards and security. In today's world, if we cannot comply with safety, security, and environmental laws, we cannot accomplish our mission. That, in fact, is what has happened to us at two of our key facilities within the past 2 years, at Savannah River and Rocky Flats.

FY 1992 Congressional Budget Request
050 National Defense Function
(Dollars in Millions)

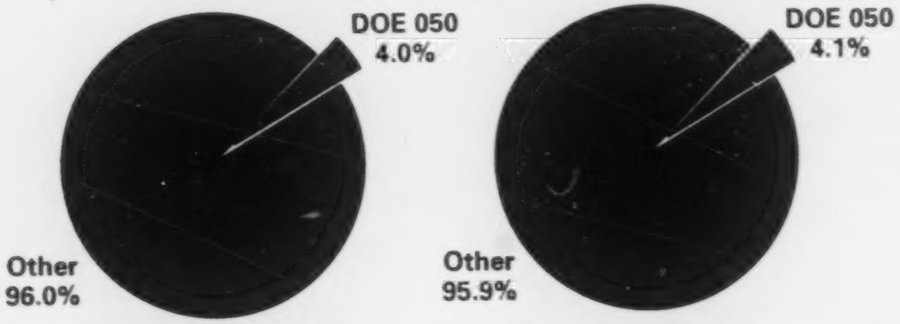
	FY 1990	FY 1991	FY 1992	FY 1993
Defense Programs	$6,737	$7,330 *	$6,747	$6,828
Sec. Eval.	14	15	15	15
NPR	299	375	500	506
Navy	761	770	801	807
EM	2,393	3,116	3,705	4,076
Educ. Progms.	-	50	-	-
Prior Yr. Adjusts.	-9			
Total, AEDA (053)	$10,195	$11,656	$11,768	$12,232
DOD - Military (051)	293,000	273,000	278,300	277,900
Defense Other (054)	600	1,100	800	800
Total 050	$303,795	$285,756	$290,868	$290,932

* Includes Enacted Supplemental of $283M for Rocky Flats and $406M Transferred in FY 1991 to Other DOE Offices

National Defense - 050 Account

Budget Authority

($ in Billions)



FY 1991 Total – $285.5

FY 1992 Total – $290.9

NATIONAL DEFENSE BUDGET

The next chart is labeled "National Defense—050 Account." The Department of Energy's portion of the 050 account has increased very slightly in percentage in fiscal year 1992, to 4.1 percent of the total.

The 050 national defense function is broken down in this chart by its component parts. The 053 function is the "Atomic energy defense activities" account. The portion for which I am responsible is the top line, defense programs, which is a part of the 053 account.

This chart shows a decline in the defense programs budget from $7.33 billion in fiscal year 1991 to $6.747 billion in fiscal year 1992, or a decline of 8 percent. These figures are not completely comparable, however. As I will show later, this is due to a transfer of $406 million from defense programs to other DOE offices, principally to environmental restoration and waste management.

Defense Programs
Comparative Budget Analysis
(Based on Adjustments to FY 91/FY 92 to Effect Fair Comparison)

Then Year Dollars

	FY 1990		Adj. FY 1991		FY 1992		FY 1993
Defense Programs	$6,737		$6,924		$6,747		$6,828
% Change		2.7		-2.5		1.2	

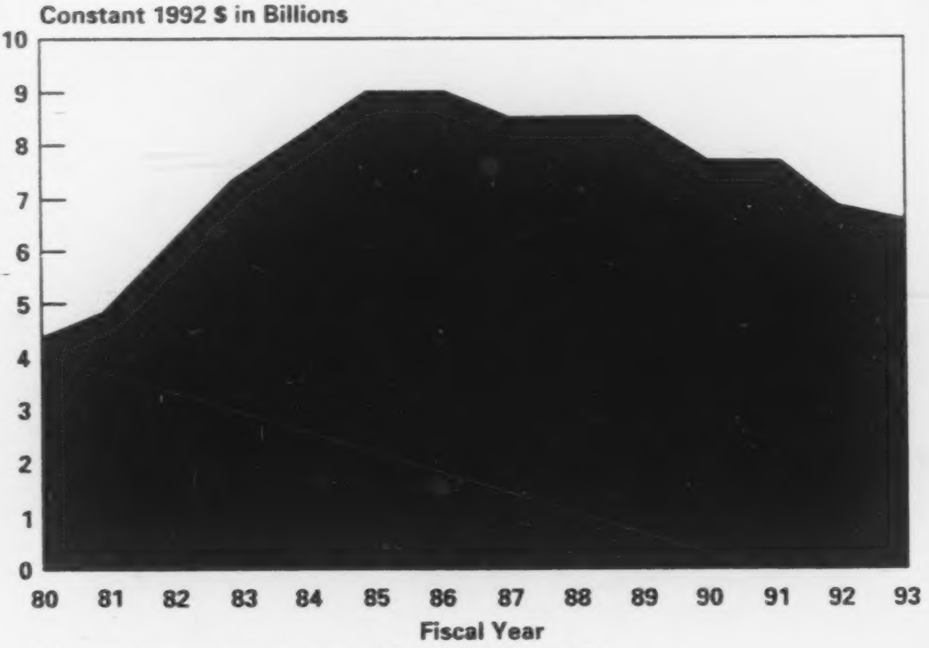
Constant 1992 Dollars (Based on 4% Escalation/Year)

	FY 1990		Adj. FY 1991		FY 1992		FY 1993
Defense Programs	$7,287		$7,215		$6,747		$6,565
% Change		-1.2		-6.5		-2.7	

DEFENSE PROGRAMS BUDGET REQUEST

This chart compares the defense programs budget after making adjustments in fiscal year 1991 for the $402 million transferred to other DOE offices. You can see here that from fiscal year 1991 adjusted to fiscal year 1992 is a drop of about 2.5 percent. I should point out that included in the $6,924 billion figure for fiscal year 1991 is a supplemental of $283 million. We very much appreciate the House and Senate providing this supplemental appropriation for Rocky Flats. Actually, some of that $283 million will be spent in fiscal year 1992. So the net probably is about the same number for the 2 years.

Defense Programs Funding Summary



* Includes Enacted Supplemental of $283M for Rocky Flats

In constant fiscal year 1992 dollars, we clearly have a decrease in our budget.

We call this a mountain chart, which shows in constant fiscal year 1992 dollars the trend in defense programs funding over the past decade into the early 1990's; the sharp increase in the early 1980's to pay for initiatives of the previous administration to improve and expand the complex production capability and capacity; and then, later, a decline from 1986 to 1993 resulting from budget constraints driven largely by Federal deficit reduction efforts, and, to a much lesser extent, by reduced weapons requirements from the Defense Department.

DEFENSE PROGRAM PRIORITIES

OPERATIONAL

- ES&H COMPLIANCE
- WEAPON SAFETY IMPROVEMENTS
- ROCKY FLATS
- SAVANNAH RIVER REACTORS
- WEAPONS COMPLEX RECONFIGURATION

MANAGEMENT

- DEFENSE PROGRAMS MANAGEMENT TEAM
- SELF-ASSESSMENT
- SAFETY AND SECURITY
- TECHNOLOGY TRANSFER

DEFENSE PROGRAMS PRIORITIES

I would like to discuss briefly our priorities in defense programs, both operational and management.

Our primary operational priorities are, clearly, compliance with environmental safety and health requirements; making safety improvements in our nuclear weapons; the need for safe resumption of activities at Rocky Flats and Savannah River; and reconfiguration of the nuclear weapons complex.

These operational priorities have to compete within declining budgets. None of the priorities can be accomplished to the exclusion of others. For example, we cannot improve the safety of our nuclear weapons stockpile without Rocky Flats. With a declining budget, we can only accommodate the most critical needs: making nuclear facilities safe and addressing the highest priority: environmental and health improvements. We simply cannot do all the things we really need to do. Future reconfiguration activities must be scoped within very tight fiscal constraints.

With respect to the management priorities, we are establishing a new defense programs management team, as I will show on the next chart, emphasizing line management responsibility and accountability. We are developing a self-assessment group consistent with the Secretary's directive for all offices in the Department of Energy. We will continuously appraise how well we, as an organization, are performing. Safety and security are receiving added emphasis by training and upgrading the technical competence of both our headquarters and field staff. Finally, technology transfer at our laboratories is now a major mission. We have had a substantial increase in the budget for these activities in fiscal year 1992.

DEFENSE PROGRAMS MANAGEMENT TEAM

- EMPHASIS IS ON LINE MANAGEMENT RESPONSIBILITY AND ACCOUNTABILITY
- MAJOR WEAPONS PROGRAM FIELD OFFICES WILL NOW REPORT TO ASDP
- NEW OFFICES IN DP
  - RECONFIGURATION OF WEAPONS COMPLEX
  - DEPUTY SCIENCE AND TECHNOLOGY ADVISOR
  - FACILITY OPERATIONS, SAFETY AND SECURITY

MANAGEMENT TEAM

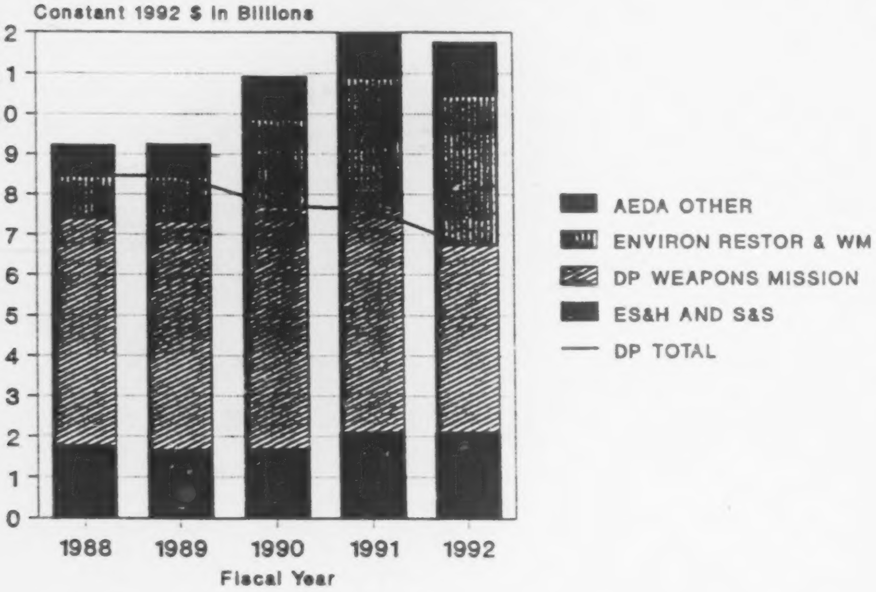
With regard to our management team, the major weapons program field offices that will report directly to me are Albuquerque, Nevada, Savannah River, and Rocky Flats. In the past, they reported to the Under Secretary. Other similar alignments have been made within the DOE for other offices.

I have also established within the Office of Defense Programs an office for reconfiguration of the weapons complex with a Deputy Assistant Secretary who will report to me. A new Deputy Science and Technology Advisor will have broad oversight over the laboratories at Los Alamos, Sandia, and Livermore.

We are organizing now to make sure that our facility operations are handled by a line organization throughout the complex, our nuclear materials work, our weapons production work, and our RD&T work in terms of how we run our facilities.

I think these are improvements which will strengthen our organization.

ATOMIC ENERGY DEFENSE ACTIVITIES (AEDA)
FUNDING HISTORY*



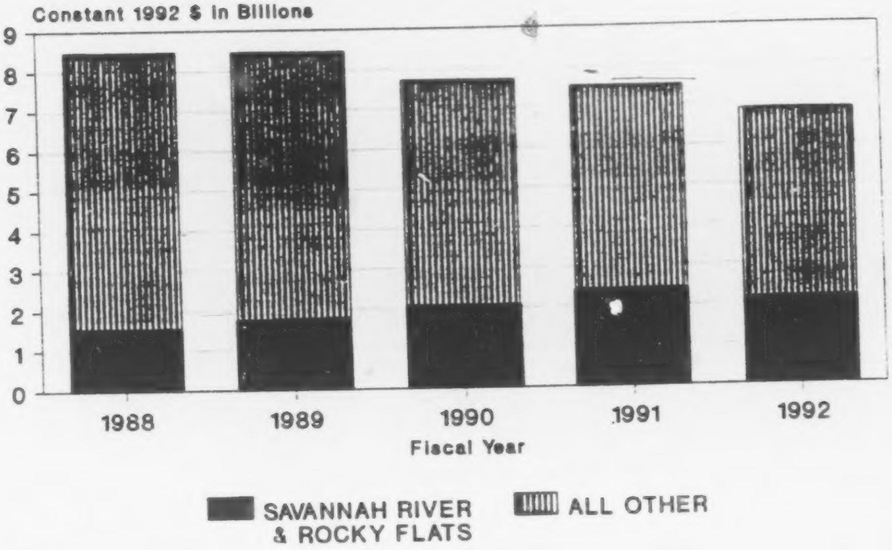
* Includes Enacted FY 1991 EM & DP Supplementals

DEFENSE PROGRAMS FUNDING

This next chart demonstrates how the defense programs weapons mission is being squeezed by other activities in the "Atomic energy defense activities" appropriation account. This chart is in constant fiscal year 1992 dollars. The horizontal, thin, black line crossing the chart represents the defense programs dollars appropriated in fiscal years 1988 through 1991 and proposed for fiscal year 1992.

The green area representing the defense programs weapons mission, shows a decline of about 20 percent, from fiscal years 1988 to 1992. That is a little bit more than reality because we have transferred some functions in that green area to the Office of Environmental Restoration and Waste Management. Nonetheless, there clearly is a decline in our overall budget to accomplish our mission.

DEFENSE PROGRAMS
SAVANNAH RIVER OPERATIONS/ROCKY FLATS FUNDING HISTORY*



* Includes Enacted Supplemental of $283M for Rocky Flats

This chart is intended to show the impact of Savannah River and Rocky Flats in the recent past. They are taking an ever-increasing share of the defense programs budget at the expense of other defense programs activities. The blue is Savannah River and Rocky Flats. You can see the increasing percentage of funding to those facilities. We are thus paying a high price for the long neglect of these two major components of our nuclear weapons complex.

DEFENSE PROGRAMS BUDGET REQUEST

This is a breakdown of the fiscal year 1992 defense programs budget, comparing it to fiscal year 1991. As I said earlier, on a comparative basis there is a decrease in the defense programs budget of about 2.5 percent. On a constant dollar basis, assuming a 4-percent escalation, the decrease is more severe, about 6.3 percent.

Defense Programs
FY 1992 Request
(Dollars in Millions)

		FY 1991	% Delta	FY 1992 Request	FY 1993 Request
Weapons Activities	Research, Dev. and Testing	$1,737	1.5	$1,764	$1,783
	Production and Surveillance	2,792**	-8.7	2,548	2,577
	Program Direction	106	53.0	164	173
	Nuclear Materials Production	2,342	-19.8	1,877	1,898
	Verification & Control Technology*	196	19.8	235	237
Security Affairs	Safeguards and Security	91	5.4	96	97
	Security Investigations	65	-3.0	63	63
	Total Defense Programs	$7,330	-7.9	$6,747	$6,828
	Comparable Prior Years	$6,924	-2.5	$6,747	$6,828

* Includes Office of Intelligence

** Includes Enacted Supplemental of $283M for Rocky Flats

FY 1992 Defense Programs Budget

- Continues Compliance Activities
- Savannah River
  - Operates K Reactor; Delays L Reactor; Defers P Reactor Indefinitely
- Rocky Flats
  - Phased Resumption
  - Pit Production in FY 1992
- Production Workload Per NWSM
- Reduced Laboratory Staffing and Testing
  - Continues Downward Trend
- Reconfiguration PEIS
  - Early FY 1994 Record of Decision
- TTBT/PNET Implementation
- Technology Transfer Initiative

I would like now to highlight for you some of the key features in our 1992 budget proposal.

We will, of course, continue with our compliance activities in the areas of health, safety and the environment, and safeguards and security; but, we must prioritize because of budget constraints. We expect to give Tiger Team corrective actions about $1 billion in the next several years, giving top priority to those activities which most affect the health and safety of the public and our workers and those activities needed to comply with the law.

With regard to Savannah River, our plans are to start up the K-reactor this summer, delay startup of L-reactor until a later, undefined date, and terminate the operation of the P-reactor.

With regard to Rocky Flats, with congressional approval of the President's supplemental request of $283 million for fiscal year 1991, we can move forward with our plan to bring building 559, the analytical lab, into operation this summer and begin the manufacture of plutonium pits in early fiscal year 1992, such that we will meet Defense Department requirements for weapons deliveries to the services in fiscal year 1992.

Our production workload is based on the resumption of Rocky Flats' plutonium pit manufacturing in early fiscal year 1992 and on the President's nuclear weapons stockpile memorandum. In fiscal year 1992, we would produce [deleted] pits at Rocky Flats.

Unfortunately, because of budgetary constraints, the demands to bring the complex into ES&H and S&S compliance and the need to fulfill the DOD requirements, we must again reduce laboratory staffing and underground testing. Reduction in full-time equivalents in the weapons RD&T program since fiscal year 1990 is about 17 percent, and about 5 percent from fiscal years 1991 to 1992. There has been a 30-percent reduction in laboratory personnel devoted to weapons RD&T since 1987.

With respect to testing, there has been a steady decline for the past several years. Testing, as I am sure you know, is important to maintain the confidence in the operability and reliability of our nuclear weapons in terms of safety, security, and effectiveness, and to understand the effects of the nuclear environment on our system's survivability, and to avoid technological surprise. We are disturbed by that downward trend.

With regard to the reconfiguration of the weapons complex, the study was completed and issued to the Congress and public in January 1991. A programmatic environmental impact statement is being prepared and the plan is for the Secretary to issue a record of decision under NEPA in early fiscal year 1994. The Secretary has announced that his preferred option is to relocate Rocky Flats. That is as much as we are able to state at this time with respect to the Rocky Flats situation.

With regard to the Threshold Test Ban Treaty and the Peaceful Nuclear Explosions Treaty, we are implementing verification protocols which have been negotiated with the Soviet Union and ratified by the Senate last September. This requires increased funding in the fiscal year 1992 budget for on-site test verification and related technology development.

Finally, in technology transfer, as I indicated earlier, we have achieved some important successes involving our weapons laboratories and we are now requesting an increase of about 60 percent over fiscal year 1991 to a proposed level of $32 million in that area in fiscal year 1992.

Defense Programs

Recommended Alternative Funding to B90 Weapons System

- Since submission of Defense Programs FY 1992 Budget, DOD has decided not to fund B90 Weapons Systems production activities in FY 1992.

- We strongly request that Senate authorize and appropriate alternative funding to support high priority needs for Defense Programs, which include:

  - expanded nuclear weapons disposal capability at Pantex to handle increased weapon requirements

  - priority funding of weapons production and surveillance requirements

B–90 WEAPONS SYSTEMS

One of the areas where we are concerned is the potential loss of funds in our budget associated with the B–90 weapon system. The Defense Department did not include funding for the B–90 weapon system production activities in fiscal year 1992. However, because of the timing of finalizing DOE's fiscal year 1992 request, our budget proposal includes [deleted] allocated to support this system in the production and surveillance program. We would urge the Senate to authorize the funding so that we may redirect it to support emergent high-priority needs for defense programs. These include an expanded nuclear weapons disposal capability at Pantex to handle increased weapon retirements and a variety of funding for weapons production and surveillance requirements.

We have met with your staff, Senator, and discussed these needs in a more specific way. We are very hopeful that we can retain the roughly [deleted] associated with the B–90 and not lose it. As you can see from the squeeze we have in defense programs, we need the funding as we proceed through fiscal year 1992. I will discuss the outyears in a minute.

Senator JOHNSTON. Now the Navy didn't request funding for the B–90, but DOE did?

Mr. CLAYTOR. The Navy dropped it from their request, but it remained in ours. It was a last minute decision by the Defense Department to drop it, but the B–90 funding is still in our budget. We would like to propose some alternatives to capture that money, which we desperately need to meet our requirements.

Senator JOHNSTON. By "capture the money," do you mean to reprogram?

Mr. CLAYTOR. Since it isn't in the reprogramming stage, we would like to reallocate it. We would like to keep those funds available. It is very important to us.

depth strike bomb, he would wait for congressional action to report. But the Navy was required to submit before actually providing funding in the Navy budget for that program. Unfortunately, the decision was so late that it did not catch the DOE budget. That explains the disconnect between the Defense and Energy budgets.

Senator JOHNSTON. The B–90 would be able to kill a submarine. At what range?

Dr. BARKER. I probably should get you that exact number for the record. But the [deleted].

[The information follows:]

RANGE OF EFFECTS OF THE B–90

[Deleted.] The actual range of effects has several variables: ocean temperature, type of target, location of target, movement or evasion routines of target, sensor detection, and localization capabilities for example. [Deleted.] A kill is defined as a seaworthiness, mobility, or weapons delivery impairment. [Deleted.] As the type of target changes, the range of effects also changes. [Deleted.]

Senator JOHNSTON. What's the second convergence zone?

Dr. BARKER. That depends on the sea conditions. But the sonar signal from a source will go through several maxima or minima between the source and the receiver. What we are talking about here is that [deleted]. But at the extreme ranges of the sonar capability, their ability to [deleted]. In fact, that's the reason why the B–57 depth strike bomb has been a part of the Navy inventory for almost 20 years.

The B–90 depth strike bomb basically provides a [deleted] lethal capability, but would incorporate the modern safety and security features that we would like to have in every nuclear weapon in the inventory.

So the Congress, a year ago—with the lead in from the Senate Armed Services Committee—required the Navy to submit a report which basically justified the mission with the idea that if they did not justify the mission, the B–57, the old bomb, should be removed from the inventory.

Senator JOHNSTON. How many B–57's do we have?

Dr. BARKER. [Deleted.] They can be either depth or strike bomb.

Senator JOHNSTON. What are their KT's?

Dr. BARKER. [Deleted.]

FY 1992 DEFENSE PROGRAMS
CONGRESSIONAL BUDGET
OMB OUTYEAR ALLOWANCES
(DOLLARS IN MILLIONS)

THEN YEAR DOLLARS

	ADJUSTED FY 1991	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996
DP	$6,924	$6,747	$6,828	$7,045	$7,211	$7,420
% CHANGE		−2.5	1.2	3.2	2.4	2.9

CONSTANT 1992 DOLLARS (BASED ON 4% ESCALATION/YEAR)

	ADJUSTED FY 1991	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996
DP	$7,215	$6,747	$6,565	$6,513	$6,411	$6,343
% CHANGE		−6.5	−2.7	−0.8	−1.6	−1.1

DEFENSE PROGRAMS BUDGET REQUEST

Mr. CLAYTOR. Senator, I have two more charts to show.

This chart shows the outyear situation with respect to the OMB allowances and its impact on defense programs. In then-year dollars, we have slight increases as we move out to fiscal year 1996, but it does not keep pace with inflation.

If we assume a 4-percent escalation rate, in constant 1992 dollars, we literally have a declining budget as we move out to fiscal year 1996. This has impacted our laboratories and our production and surveillance budget at our weapons production facilities, and it does not allow us to proceed aggressively with the reconfiguration of the weapons complex. This is a problem for the outyears that the Secretary of Energy and the entire Government faces. But since I am here today representing defense programs, I want to let you know the particular impact on us.

SUMMARY

- BUDGET - INCLUDING FY 91 SUPPLEMENT - REFLECTS MEETING CURRENT NATIONAL SECURITY REQUIREMENTS WITH NO MARGIN
- BUDGET SEEKS BALANCE BETWEEN WEAPONS MISSION AND EXECUTION OF THIS MISSION IN A SAFE, SECURE AND ENVIRONMENTALLY SOUND MANNER
- EMPHASIS WILL CONTINUE TO BE PLACED ON:
  - GIVING PRIORITY TO FACILITY AND WEAPONS SAFETY AND SECURITY
  - ACHIEVING EFFICIENCIES AND COST REDUCTIONS
  - PRESERVING WEAPONS RD&T CAPABILITY
  - RECONFIGURING THE NUCLEAR WEAPONS COMPLEX
- OVERRIDING CONCERN IS UNCERTAINTY OF EFFECTIVELY CARRYING OUT OUR MISSION WITH REQUIRED ATTENTION TO ES&H AND UPGRADING WEAPONS COMPLEX WITHIN FUNDING CONSTRAINTS BEYOND FY 1992

CONCLUDING REMARKS

Mr. CLAYTOR. I would like to conclude with four main points.

Point No. 1 is that the budget for fiscal year 1992, including the essential fiscal year 1991 supplemental of $283 million, which you have approved, reflects meeting current national security requirements, but with no margin. We do expect to get Rocky Flats running with this budget and we expect to get a Savannah River reactor running with this budget. However, in the outyears, defense programs faces the problem of a declining budget, even if a 4-percent inflation rate is assumed.

Point No. 2 is that the budget does seek a balance between carrying out the Department's mandated weapons mission and the execution of this mission in a safe, secure, and environmentally sound manner.

Point No. 3 is that I will see to it, in my role as Assistant Secretary for Defense Programs, that emphasis continues to be placed on giving priority to facility and weapons safety and security. As for achieving efficiencies and cost reductions, we are working to do this with a task force approach at our major weapons sites and with a weapons research, development, and testing consolidation panel. We know that we cannot really expect to go back to the Defense Department or to the Office of Management and Budget unless we can demonstrate that we are doing everything we can to keep our own costs down. We are working hard at that.

Preserving our vital weapons RD&T capability at our labs is clearly a priority, and we are hurting there. For reconfiguring the nuclear weapons complex, we are requesting $42 million in the fiscal year 1992 budget.

Finally, my fourth point and overriding concern is the uncertainty of effectively carrying out our mission with the required attention to environment safety and health and upgrading the weapons complex, and at the same time living within the funding constraints we face beyond fiscal year 1992.

PREPARED STATEMENT

Thank you very much, Mr. Chairman, for the opportunity to testify before your subcommittee. I will be glad to answer your questions.

Senator JOHNSTON. Thank you, Mr. Claytor.

[The statement follows:]

STATEMENT OF RICHARD A. CLAYTOR, ASSISTANT SECRETARY FOR DEFENSE PROGRAMS

INTRODUCTION

Good afternoon Mr. Chairman and Members of the Committee. I am pleased to appear before you today to discuss the Department of Energy's (DOE) fiscal year 1992 Defense Programs appropriation request for $6.7 billion. This request does not include other national security functions which will be addressed in separate testimony by other organizations within the Department.

As the new Assistant Secretary for Defense Programs, I would like to thank all the Members of the Committee for their continued strong interest in and support of the Department's Defense Programs. I would also like to thank the Members of the Committee for your support of our $283 million fiscal year 1991 Supplemental request. These funds will be used to assure that all necessary safety, security and environmental steps are taken to permit the resumption of plutonium manufacturing operations at Rocky Flats. I look forward to working with all of you as together we shape the future directions of Defense Programs.

Today I want to offer some perspectives on the changing world scene, then briefly discuss Defense Programs near term goals, address the challenges I believe we are facing, and close with an overview of Defense Programs budget needs.

MEETING NATIONAL DEFENSE NEEDS IN A CHANGING WORLD

The world situation has changed drastically since last year. The Warsaw Pact has collapsed. Stockpiles of intermediate range nuclear weapons in Europe are being reduced, and ongoing negotiations with the Soviet Union offer the promise of even further reductions in nuclear weapons. Meanwhile, disunity, dissension, and political and economic turmoil in the Soviet Union and the threat of chemical, biological and even nuclear weapons in third world countries, continue to pose potential new threats to our national security. Concurrently, the federal budget is increasingly constrained, a trend that can be expected to continue for the foreseeable future as we attempt to address the federal budget deficit. Each of these developments can be expected to have a profound impact on our nuclear weapons complex and must be addressed explicitly as we move toward the 21st century.

Nuclear deterrence has been a cornerstone of our national security policy since the end of World War II. It has been instrumental in preserving world peace for the past 45 years, and I believe that it has contributed in a significant way to bringing about an end to the Cold War. While number and types of nuclear weapons may change, I fully expect that nuclear deterrence will remain an essential element of our national defense strategy for the foreseeable future.

STATUS OF THE NUCLEAR WEAPONS COMPLEX

The Department of Energy is responsible for the research, design, development, production, testing, retirement, safety, safeguards, and security of nuclear weapons, nuclear materials, and the nuclear weapons complex. There are 13 major sites in the complex, many of which were built over 30 years ago when there were less stringent environmental and safety requirements. Emphasis in the past was placed primarily on meeting production requirements as opposed to maintaining and upgrading the complex, protecting the health and safety of the public and our workers and protecting the environment. Continued operation of our outmoded facilities requires significant resources to achieve necessary operational improvements and to reduce the backlog of required maintenance.

Secretary Watkins recognized the problem and initiated a number of measures to improve the operation of DOE facilities. These initiatives were designed to move the

Department toward full accountability and compliance with environmental, safety, and health laws. We have made real and measurable progress in implementing new operating policies and procedures to bring the Department into compliance with State and Federal environmental, health, and safety regulations. At the same time, we need to move forward with the resumption of nuclear weapons production to meet the President's national security objectives. In this regard, I share the Secretary's belief that achieving production and safety goals are not incompatible.

DEPARTMENT OF ENERGY ACCOMPLISHMENTS TO DATE

In reorienting our efforts, the Secretary has: (1) modified award fee contracts for all nuclear weapons production facilities so that not less than 51 percent of the award fee is based on environmental, safety, and health compliance activities, and included similar emphasis on environment, safety, and health for other DOE management and operating contractors, as appropriate; (2) completed comprehensive negotiations with states that host DOE nuclear facilities, including Colorado, Idaho, California, Florida, Nevada, New Mexico, Washington and Texas, to provide direct access to DOE facilities and support their oversight of DOE environmental monitoring programs; (3) completed 21 Tiger Team assessments of major Departmental facilities resulting in action plans identifying items requiring correction approved for implementation at 10 Defense Programs sites; (4) revised the Department's NEPA policy to ensure its prominence in the decision making process, with full disclosure and public involvement; (5) established a new management team within the Office of Defense Programs under my leadership to execute the Defense Programs mission while emphasizing safety over production; (6) improved coordination with the Occupational Safety and Health Administration (OSHA), which has provided DOE with assistance on three Tiger Team Assessments, conducted extensive training of DOE staff, and carried out an evaluation of DOE's occupational safety and health program; and, (7) strengthened technical capabilities of line management and oversight personnel by strengthening technical oversight, conduct of operations and maintenance, technical training and reporting of critical occurrences throughout the complex. Although much remains to be accomplished, we are proud of the significant progress to date.

NEAR-TERM PRIORITIES

Our most immediate need has been to improve the margin of operational safety in order to resume many activities in the nuclear weapons complex. The production reactors at Savannah River were shut down for safety reasons prior to Secretary Watkins taking office. Further, he found it necessary to delay resumption of plutonium processing activities at the Rocky Flats Plant in order to achieve needed improvements in safety and security. Today, neither of these facilities at the two sites is operating. The Secretary has made a commitment that activities at these facilities will not resume until he is completely satisfied that they can be operated in a secure manner with full assurance of the health and safety of the public and our workers and the protection of the environment. Nonetheless, the Secretary and I recognize that it is important that these facilities resume as soon as possible in order to meet national defense requirements. This is especially important in view of the critical role these facilities play in the maintenance of our nuclear weapons stockpile, including improvements in the safety of existing weapons systems.

On February 4, 1991, the Secretary signed a Record of Decision (ROD) on the Environmental Impact Statement (EIS) for the continued operation of reactors at the Savannah River Site. The ROD is the final step in the National Environmental Policy Act (NEPA) process for assessing the environmental impacts of continued operation of the K, L, and P Reactors. The ROD reflects the Department's decision to continue to operate the K Reactor, defer until later the operation of the L Reactor, and defer indefinitely the operation of the P Reactor. Important milestones must still be achieved before the K Reactor is ready for operation. The Secretary will not authorize reactor operations until he is personally satisfied that applicable environmental, safety and health considerations have been fully addressed. The Department is continuing with the safety upgrades for the K Reactor as outlined in the Safety Evaluation Report (SER), and has begun the first phase of an Operational Readiness Review (ORR) which will be satisfactorily completed prior to a decision to restart. An action plan has been prepared to implement commitments made in the EIS and ROD for mitigation of any environmental impacts associated with the project.

Currently, the K Reactor is undergoing system testing which is expected to be completed this summer. After successful completion of both system testing and satisfactory resolution of other technical issues, Westinghouse will be ready to request authorization from the Department to restart the reactor. I wish also to point out that the Secretary is concerned about the Savannah River employees that may be affected by the Department's decision to restart only two of the reactors. Westinghouse has indicated that every effort will be made to provide job placement in needed positions on other Savannah River projects and re-training as required to minimize the effect on these individuals.

Currently, the Department projects that the Rocky Flats analytical laboratory will resume this summer. Although the laboratory is not a production facility, we believe it is prudent to resume the laboratory for use as a critical verification tool for other buildings at the plant. Resuming operations at the laboratory prior to resumption of production activities in other buildings is desirable because the activities and standards employed to prepare the laboratory for operation are the same as those which will be applied to the production buildings. We expect to resume fabrication of pits at Rocky Flats later this calendar year. Because no new plutonium will be required for this activity, pit fabrication will use existing plutonium inventories and weapons returns. The recently enacted $283 million FY 1991 Supplemental Appropriation will help us fund significant urgent, unbudgeted health, safety, safeguards, and security requirements to bring this long neglected plant and its workforce into a condition so that resumption of plutonium processing activities can proceed safely and in compliance with the law and Departmental requirements. As with restart plans for Savannah River, I wish to emphasize that Admiral Watkins has stated that resumption of plutonium processing activities at Rocky Flats will not occur until he is satisfied that all the safety and security requirements have been met and until the public has been given ample opportunity to review the resumption process.

LONG-TERM PRIORITIES

In addition to the safety initiatives being taken at our facilities, a review of the future configuration of the nuclear weapons complex has been completed. This review concluded that the future weapons complex should be sufficiently flexible to respond to any nuclear weapons requirements directed by the President and that it should be smaller, less diverse, and less expensive to operate than today's complex. The number and size of weapons production sites should be minimized and, where practicable, nonnuclear production activities should be transferred to the private sector. At the same time, the restructured weapons complex must comply with all laws and regulations, while meeting the highest standards regarding nuclear and industrial safety; safeguarding the health of the public and employees; protecting the environment; and ensuring the safety and security of nuclear materials and weapons components. The Secretary released the Weapons Complex Reconfiguration Study (CRS) on February 7, 1991. The entire reconfiguration effort involves a multistep process. On February 11, 1991, a Notice of Intent to prepare a Programmatic Environmental Impact Statement (PEIS) for reconfiguration of the nuclear weapons complex appeared in the Federal Register. On the same date, the Federal Register also contained an announcement inviting Federal agencies, states, and others to propose sites on which DOE may construct and operate one or more of the facilities proposed by the CRS.

The Department is now conducting a three year in-depth examination of the proposals contained in the Report. A number of options will be examined, ranging from a "no action" alternative (as required by the National Environmental Policy Act of 1969) to a sweeping reorganization that could reduce the complex from its present 13 sites down to six or seven. Regardless of which option is ultimately adopted, the nuclear weapons complex will undergo significant changes. Possible changes include relocating the Rocky Flats Plant and two of the five remaining nuclear weapons production facilities at a single dedicated site; consolidating nonnuclear activities at one dedicated site; transferring many nonnuclear activities to the private sector; decommissioning at least one facility entirely; and examining the missions, facilities and operations of the three research and development labs for changes that could result in satisfying essential weapons requirements while streamlining the research, development and testing facilities.

Legal, technical, and resource considerations are all factors which will determine the option selected and the length of time needed to complete the complex reconfiguration. Various stages of the process will overlap, with actual construction and consolidation scheduled to begin as early as 1996. Estimated costs of reconfiguration, depending on which option is selected, range from a low of $6.7 billion to a high of $15.2 billion over the length of the program.

In addition, our reconfiguration effort will also be examining ways in which we can consolidate functions, facilities, and activities at the weapons laboratories without denigrating our independent peer review process on weapons design, development and safety.

Notwithstanding the Department's plans for reconfiguration of the complex, it is necessary that significant resources be devoted during the transition period toward a reconfigured complex to maintain the capital assets of the present complex and assure that it can carry out its production mission with required attention to health, safety, and the environment.

Both the reconfiguration and related transition activities will require substantial resources at a time of significant federal budget constraint. The alternative—to continue to use piecemeal fixes to run an aging complex—will be more expensive and provide a less reliable nuclear weapons complex. Providing the funding for transition and reconfiguration is considered necessary to ensure continued viability of our nuclear deterrent. However, in response to continually constrained federal budgets, a task force has been established to examine ways in which we can cut costs throughout the complex.

The Secretary also has taken steps to strengthen the management, organization, and performance of the Office of Defense Programs. A revised organization will include two new positions—a Deputy Assistant Secretary for Weapons Complex Reconfiguration to direct reconfiguration activities and a Deputy Science and Technology Advisor who will have broad oversight responsibility for the nuclear weapons laboratories. Also, action is underway to structure the Defense Programs organizations to focus greater attention on the safe and secure operation of all of our facilities within the Nuclear Weapons Complex. In addition, the functions of the Office of the Assistant Secretary for Defense Programs have been streamlined by the reassignment of both intelligence functions and safeguards, security and classification activities. Finally, as part of the Secretary's broad initiatives for all of the Department's nuclear-related activities, we have established an Office of Nuclear Self-Assessment within the Office of Defense Programs and have given high priority to upgrading standards, training, and conduct of operations and maintenance within the entire Defense Programs' complex.

Recently, Secretary Watkins directed that a thorough review be conducted of the safeguards and security activities of the Department necessary to assure the protection of nuclear weapons, materials and facilities. On April 1, 1991, following release of the task force report, the Secretary reassigned the security affairs functions to the Under Secretary in order to improve the Department's safeguards and security policy making which affects not only Defense Programs, but other Departmental programs as well. The funding for these activities was included under Defense Programs in the budget submission, so I will address these requirements later in my testimony.

WEAPONS RESEARCH AND DEVELOPMENT LABORATORIES

To meet national security requirements, the national laboratories at Los Alamos, Lawrence Livermore, and Sandia carry out the core mission of research, development, and testing of nuclear weapons. This vital mission has been the technical cornerstone of our nuclear deterrent since its inception with the Manhattan Project. These laboratories perform vital research aimed at expanding the frontiers of science and technology. The DOE laboratories are recognized worldwide for their substantial contributions in such fields as materials research, chemistry, nuclear physics, solid-state physics, microelectronics, mathematics, and computer science. The Secretary recognizes that laboratory capabilities must now be directed at changing national priorities, but it is critical that the laboratories' core mission be preserved. In this regard, he has chartered a Secretary of Energy Advisory Board composed of distinguished scientists to review and recommend what changes are necessary in the roles and responsibilities of these laboratories. The Secretary and I expect a report this year which will provide a framework for how the Department can best maintain and utilize these laboratories to maximize military and economic security and meet changing national priorities. In the interim, the downward trend in laboratory staffing continues as a result of the difficult choices made to provide for other high priority Defense Programs activities. Laboratory employment is expected to decline by approximately six percent (500 positions) during FY 1991.

FY 1992 BUDGET REQUEST

The Department of Energy's FY 1992 Defense Programs appropriation request totals $6.7 billion, a decrease of $300 million from the FY 1991 appropriation of $7.0 billion. The decrease reflects the transfer of funding to the Office of Environmental Restoration and Waste Management of several facilities that will be permanently removed from production activities in FY 1991, and to the Office of Nuclear Energy for Naval Reactor uranium enrichment activities. Chart 1 compares the FY 1992 budget request to the FY 1991 appropriation for each program.

The Research, Development and Testing program includes a $12 million increase over FY 1991 for technology transfer, but continues the recent downward trend of about 6 percent in laboratory staffing. The Production and Surveillance program request of $2.5 billion has been formulated to place much greater emphasis on weapons safety, and security, but is consistent with changing directions in national security requirements and fiscal constraints. Since the submission of the President's FY 1992 budget, the Department of Defense has decided not to fund the B 90 weapons system production activities in FY 1992. We are working closely with cognizant congressional staffs to allow DOE funding in FY 1992 for this weapons system to be reallocated to a high priority weapons requirement recently validated by the Secretary of Defense; support for an expanded nuclear weapon disposal capability at Pantex to handle increased weapon retirements; and other priority funding of Weapons Production and Surveillance requirements.

Under the Weapons Program Direction request, $42 million of the increase is required to initiate efforts associated with the reconfiguration of the complex to assure that a safe, reliable, and efficient complex will be available over the long term to support the nuclear deterrent, and for improvements in nuclear self assessment and emergency management.

The $465 million reduction in the Nuclear Materials Production program results from (1) the transfer of the Feed Materials Production Center (Fernald) and all facilities at the Hanford Site, including the N reactor, to the Office of Environmental Restoration and Waste Management, (2) the transfer of enriched material funding to the Naval Reactors Program and (3) the operation of only one production reactor at the Savannah River Site.

The $31 million increase in Verification and Control Technology will provide funding for systems to verify compliance with existing treaties, such as the Limited Test Ban and Threshold Test Ban treaties, and provide support to other federal components as they negotiate future treaties and agreements.

The Safeguards and Security request supports increased assessment and oversight of field operations, while the Security Investigations request will enable the Department to continue to conduct initial investigations for new employees while reducing the backlog of overdue reinvestigations.

The Department's FY 1992 Budget request will allow us to continue building at a modest pace on the progress that Secretary Watkins has initiated during the past two years. Although we have made good progress in achieving our objectives of full accountability and compliance with environmental, safety, and health laws, current federal budget constraints imposed by the Budget Enforcement Act of 1990 will require difficult management decisions in order to accomplish our initiatives to ensure a successful transition to reconfiguration of the complex. The FY 1992 budget together with the FY 1991 Supplemental funding for Rocky Flats will, however, allow Defense Programs to make modest progress toward achieving its near term goals. More detailed and specific explanations of specific program areas in the Defense Programs FY 1992 budget request are contained in the prepared statements of the cognizant Deputy Assistant Secretaries and Office Directors.

CLOSING REMARKS

Defense Programs has worked hard this past year to obtain a firm understanding of the magnitude of the problems facing us. During this period, we have established new goals, initiated a major change in the Department's culture, and developed new budget plans to achieve our objectives. Although much of this activity was well underway by the time I assumed my position as Assistant Secretary for Defense Programs in October 1990, I have been actively involved in the FY 1992 budget process and fully support it.

While we are making progress, I have concerns. There are uncertainties associated with accomplishing our objectives on schedule. Although I believe that both a Savannah River reactor will be restarted and Rocky Flats plutonium activities will be resumed this year, there are outside forces beyond our control which could affect our present course of action. Other uncertainties, for which funding has not been included in our FY 1992 budget request, are the unknown requirements which may be identified by our Tiger Team investigations, and arms control treaty verification requirements which are not in place today. We also are concerned with the downward trend in engineers and scientists devoted to our core mission of weapons research, development and testing at our national laboratories.

However, our overriding concern is the uncertainty at this time that we can effectively carry out our mission, with the required degree of attention to health, safety and the environment and the concomitant upgrading of the nuclear weapons complex within the funding constraints we foresee in the years beyond FY 1992.

For FY 1993 and beyond, the present projection of available financial and personnel resources will require critical program trade-offs. We will work to achieve efficiencies and cost reductions where possible but, as the Secretary has stated in the Department's Posture Statement and FY 1992 Budget Overview, it is necessary that funding be provided for reconfiguration of the weapons complex as well as maintaining the complex and assuring it can carry out its production mission with required attention to health, safety and the environment as we undergo the transition to a reconfigured complex.

I personally wish to thank you for your past support of the Office of Defense Programs. Your support has been significant in helping us change the course at the Department of Energy. As new dimensions take shape—sounder environmental stewardship, safer facility operations, and changing defense requirements—I look forward to working with the Congress to secure the necessary resources and support to carry out effectively and completely this vitally important mission of the Department of Energy.

STATEMENT OF DR. ROBERT BARKER, ASSISTANT TO THE SECRETARY OF DEFENSE FOR ATOMIC ENERGY, DEPARTMENT OF DEFENSE

Senator JOHNSTON. Why don't we proceed to Dr. Barker and finish our two more witnesses. If you can wait, we will come back and ask questions after everyone has made their oral remarks.

Dr. Barker.

Dr. BARKER. Senator Johnston, Senator Domenici, it is my pleasure to be here. Unlike Mr. Claytor, who is here for his first time, I probably seem like an old face to you. This is my fifth time to appear before this committee.

Senator JOHNSTON. A familiar face.

Dr. BARKER. In fact, in a moment I want to recall what I remember of my first appearance before this group.

If my full statement may be accepted for the record, I would like to summarize it very, very briefly.

I am the Assistant to the Secretary of Defense for Atomic Energy and also the Staff Director of the Nuclear Weapons Council.

Today, I want to provide some perspective of the Department of Defense and the Nuclear Weapons Council on the atomic energy defense activities budget which you are considering today.

DOD WEAPONS REQUIREMENTS

Nuclear deterrence is going to be with us for quite some time to come, and a vital Department of Energy complex is critical to our maintenance of a credible deterrent.

So, we are interested in maintaining a healthy RD&T base, a producing production complex, obviously operating in full compliance with environmental and safety considerations.

In the last year, the Department of Defense has gone through a major reevaluation of our defense requirements. The Joint Chiefs of Staff have come forward with a much diminished nuclear weapons requirement for the future.

The current plan will result in the elimination of close to [deleted] by the end of the decade. So we will have that many fewer warheads than we have today.

Over the next [deleted] years, we will be retiring [deleted] warhead types without reducing [deleted] warhead types. So the number of different weapons in the inventory will decline from [deleted].

We, as I said, have gone through a major reevaluation of what the future defense requirements will be a far as nuclear deterrence is concerned.

NEED FOR A STRONG PRODUCTION BASE

In order to maintain a credible, reduced stockpile, we continue to need a strong RD&T function and a strong production base within the Department of Energy. We have been very disadvantaged in the last several years. We have had a Savannah River complex not producing tritium. In the last year, we have had a Rocky Flats facility not producing new plutonium pits.

It is absolutely critical that those two facilities resume production in fiscal year [deleted]. We have been able to operate up until now by taking tritium from retired warheads. We have been retiring a substantial number of warheads, many more than we have built—about [deleted] more than we have built over the last several years—and we have used the tritium from those retired warheads to supply tritium for the warheads that are still in the stockpile.

In [deleted] we will be at the point where we need new we tritium to meet our national security requirements. That is to provide the tritium that is necessarily inside weapons and to provide a reserve, [deleted], that would provide us a buffer against potential future outages in tritium production.

So [deleted] is the year we need to begin tritium production in order to meet our national security requirements.

But even with those Savannah River reactors up and operating, it is foolish to think that we can have those facilities continue to operate for decades to come. So we strongly support the Department of Energy's New Production Reactor Program.

We have to get those new production reactors, a new production reactor, on line by the turn of the century. So we strongly support the New Production Reactor Program as well as the Savannah River restart.

And, of course, we are strong supporters of getting Rocky Flats back up and operating.

We are now in danger of [deleted].

We have slipped our modernization of the safety of deployed warheads because of the fact that Rocky Flats has been down.

SAFETY AND MODERNIZATION OF THE STOCKPILE

So, in order to maintain our schedule of modernizing the safety of the inventory, as well as put [deleted] we have to get Rocky Flats up and operating.

I told you that I wanted to recall my first testimony before you. I believe in 1987, when I testified, I showed this committee pictures of the Grand Forks B-52 fire and made the comment about the importance of not just new builds but the importance of incorporating modern safety features into the inventory.

I made the point that too often, when budgets got tight, both executive and legislative branches of Government had taken the view that well, we can postpone the modernization of the bomb inventory. I made the point that the cost of that was a delay, a slip, in introducing the most modern of safety features into the weapons aboard a new aircraft.

In the last year, the Secretary of Defense made the decision that, in view of safety considerations and the changing world situation, he felt that this country could accept the risk of taking SRAM–A missiles off of alert aircraft, but still be kept in igloos and prepared, should we need to reach a higher state of alert. That is the situation we live in today.

We have a very high priority in getting the SRAM–II missile developed and deployed, so that we can replace those SRAM–A's with a system that does include the most modern of safety features.

Now let me show you four charts.

[Chart deleted.]

STOCKPILE STATUS

Dr. **BARKER.** In 1986, we talked about the 1986 nuclear weapons stockpile memorandum. That is the line in blue up there. Today I can talk about the 1991 nuclear weapons stockpile memorandum, which is the line in red.

What I have plotted is the percentage of weapons in the stockpile that incorporate modern electrical enhanced nuclear detonation safety features, the kinds of features that provide very, very high assurance against accidental nuclear detonation in the most violent of accident environments.

You can see that today, in 1992, we are at the point where about [deleted] of the stockpile has that feature. I am advancing. In 1991, we are where about [deleted] of the stockpile has that feature. By the end of the decade, [deleted] percent of the stockpile will have enhanced safety of this kind. We are tracking at about the same rate up through 1998 that I predicted in 1986. In fact, we are doing a little bit better than that beyond 1998.

[Chart deleted.]

Dr. **BARKER.** If you take a look now at insensitive high explosives, the next chart, you will see that we are not doing as well in the period between 1991 and 1998 as we predicted in 1986, and this is because of, in some cases, the slip of weapon systems, which is a funding issue, and in other cases because of DOE's inability to produce on a schedule which the Department of Defense would like.

Senator **JOHNSTON.** Is that HMX?

Dr. **BARKER.** TATB is the insensitive high explosive and the noninsensitive explosives, the more conventional explosives, are HMX-based explosives.

They are pretty rugged things. They don't go off if you look at them cross-eyed. For instance, with regard to the warhead for the Trident II missile, part of its development program was to drop the warhead some [deleted] onto a hard pad without the high explosive going off. The Department of Energy did experiments that demonstrated that was the case.

So even our not-insensitive high explosives are relatively insensitive, but not as good as the Department of Energy can deliver. And we are trying to get insensitive high explosives into as much of the inventory as possible.

But you can see that in the midyears, in the 1990's, we're not doing as well, based on this year's stockpile memorandum, as we predicted based on the 1986 memorandum. Part of that is anticipated production funding in the DOE complex.

[Chart deleted.]

Dr. Barker. If you take a look at the next chart, which is fire-resistant pits, this is a new technology that the Department of Energy has invented. In fact, the [deleted] that will retain it in an inventory in the near term is the [deleted]. But the new weapons that DOE is developing will incorporate fire-resistant pits. But, again, you can see that by the end of the decade, we are only going to be at [deleted] of the stockpile instead of [deleted] of the stockpile, as we had previously anticipated.

Again, this is, in part, because of funding, though not totally, because in some cases, DOD programs have slipped.

[Chart deleted.]

Dr. Barker. The last category up there has to do with use control, so-called categories D and F permissive action links, which are electronic devices to insure that unauthorized people cannot derive a nuclear yield from a nuclear weapon.

Again, you can see that by the end of the decade we meet our prediction points that we made in 1986; but we don't get there as fast as we would like, and, in part, this is because of anticipated funding in the DOE complex.

We are going to need new production in many cases to provide the new weapons that contain these features in getting Rocky Flats up and operating soon. These curves anticipate Rocky Flats up and operating by the end of this year.

So let us hope that we get it up and operating by the end of this year. But if we do not, then it won't even look as good as these red curves show.

So it's not just new build for the Trident II system that we're talking about. It's new build plus bringing modern safety to the rest of the stockpile.

NUCLEAR WEAPONS SAFETY

I would be remiss if I did not include in my remarks some comment about the Drell Panel. The proper name of that group is the House Armed Services Committee Panel on Nuclear Weapons Safety. That is its formal name.

They issued their report in December of last year. The Secretary of Defense and Secretary of Energy took those recommendations very seriously. They have endorsed the recommendations of the Drell Panel and have tasked the Nuclear Weapons Council to develop implementation procedures for those recommendations. They will start going to the Secretaries early next month. Specifically, the Nuclear Weapons Council will be recommending charters to the two Secretaries for the establishment of a joint surety advisory committee that would advise the two Secretaries on surety matters across the board. They will be recommending a charter to the two secretaries For the establishment of so-called red teams. These would be groups independent of the development agencies that would review and critique the safety aspects of all nuclear weapon systems—those during the development ideally, but also after they have been deployed. We will also be developing charters to implement the various other recommendations of the Drell Panel as well.

Places where the Secretaries have not taken action, I should tell you, are with respect to the internal organization of the two Departments. In those cases, both Secretaries felt that, with respect to their respective agencies, the organizations they had in existence, or the changes that were already contemplated, met the intent of the Drell Panel.

I have emphasized in my comments thus far production, admittedly production of safer and more secure weapons, as well as in some cases more effective weapons. I do not want to conclude without saying some words about research, development, and testing.

RESEARCH, DEVELOPMENT, AND TESTING

As the defense budget declines, as the 050 account gets smaller, the Secretary of Defense has often said we are going to have to take some increased risks and, hopefully, the world situation will allow us to take those risks and get away with it. But we have to keep an eye on the world and make sure that we are not moving faster than proves advisable. In the meantime, we are taking significant cuts in the "Defense" account.

It is disturbing to all of us that the RD&T account has been squeezed as much as it has, as far as the national laboratories are concerned. The Nuclear Weapons Council is going to take a look at that this year, and I hope we will have some recommendations for the Secretaries before the end of the year, providing the Council's views on the health of the RD&T complex as we now see it.

But any time you reduce that kind of technical talent by 30 percent over the last 5 years, as Mr. Claytor has said, any time you reduce the nuclear test program to the point where it is basically comparable to that of [deleted] to the lowest level—since the moratorium, it has to be disturbing to a country that sees itself as a major power in the world. We've got [deleted] different weapon systems to maintain out there. I talked about retiring [deleted] systems without replacement. We still have [deleted] systems out there, which some day are going to need to be replaced, which every day will need to be assessed in terms of their reliability, their effectiveness, their safety. We are going to count on a cadre of scientists and engineers in the nuclear weapons laboratories to tell us that those things are safe as they stand and to be prepared to design replacements should we need them.

They are going to need nuclear testing to accomplish all of those objectives. It is a valid question to ask whether, as we have shrunk down across the board, we have shrunk too far in the RD&T arena. As I say, the Nuclear Weapons Council will be looking at that this year, and we will have some recommendations for the two Secretaries before the end of the year. It is a unique asset. I am here with a very parochial purpose, as is Mr. Claytor.

The Nuclear Weapons Core Program at Los Alamos, Livermore, and Sandia, has often been asked to take on other interesting, but really nonweapons, programs or projects. This is as much of a drain on those talents, on the number of people applied to the nuclear weapons program, as anything else is.

CONCLUDING REMARKS

I will conclude my comments here, Mr. Chairman, Senator Domenici, with an endorsement across the board, which is not a surprise for the President's budget, for the Department of Energy nuclear weapons program. I have lived with this program throughout my professional life. I think this is certainly a year in which every penny of it is very, very well deserved. In fact, the question may be whether there are enough pennies or dollars there, not whether there is room to reshuffle moneys out of this very important program: tritium production now and for the future, plutonium production now and for the future, and a very, very strong RD&T complex.

Thank you.

Senator JOHNSTON. Thank you.

We are going to have to get some money out of the 050 account in defense on a 602(b) allocation to do these things, I understand, and I hope we'll be able to do them. I think we will be able to. That is a little budget trivia that we deal with.

[The statement follows:]

STATEMENT OF ROBERT B. BARKER

INTRODUCTION

Mr. Chairman, and members of the Committee, I am pleased to appear before the Energy and Water Development Subcommittee of the Senate Committee on Appropriations. I will present the views of the Department of Defense (DOD) in support of the proposed Atomic Energy Defense Activities Budget for the Department of Energy (DOE). I am the Assistant to the Secretary of Defense (Atomic Energy), and Staff Director of the Nuclear Weapons Council (NWC). I can inform you that the Defense Department supports the Atomic Energy Defense Activities Budget. It insures that a reliable stockpile is maintained and our Country's strategy of deterrence is upheld.

The international security setting is undergoing sweeping change. Before a hearing of the Senate Armed Services Committee, Secretary of Defense Richard Cheney portrayed the new defense strategy of the Administration to meet the future security needs of this Country. He stated that, "The most important change reflected in this new strategy is that we no longer are focused on the threat of a Soviet-led, European-wide conflict leading to global war." Nevertheless, the new strategy still sees the need to preserve a strong strategic offensive and defensive capability. As Secretary Cheney stated further, ". . . the Soviets continue to modernize their strategic nuclear arsenal at a pace that seems out of step with their positive actions in other spheres. Given all that is at stake, this is an area in which we can ill-afford to accept much risk." The new strategy also emphasizes the importance of a projected deterrent. The umbrella of nuclear deterrence may have to extend beyond Europe and, will likely have to be achieved with a much smaller arsenal of weapons.

The nuclear weapons production called for in this fiscal year 1992 budget will allow nuclear weapons with the most modern of safety and security features to replace weapons built in an earlier era. However, the military requirements for nuclear forces are changing, and the weapons systems presently in the stockpile may not be adequate to meet the changing role that these forces will have to play. President Bush emphasized this point in an address he made before the Aspen Institute Symposium last August: "The United States would be ill-served by forces that represent nothing more than a scaled-back or a shrunken down version of the ones that we possess. Forces that we possess right now. If we simply prorate our reductions—cut equally across the board—we could easily end up with more than we need for contingencies that are no longer likely, and less than we must have to meet emerging challenges. What we need are not merely reductions, but restructuring."

The most important new nuclear weapons systems needed for the restructuring mentioned by the President are the Trident II, SRAM II and SRAM T. Before the House Armed Services Committee this year, the Secretary of the Navy stated that the Trident II Sea Launched Ballistic Missile "* * * has improved accuracy, greater range, and larger payload," allowing our strategic submarines to engage the entire range of strategic targets. These are the capabilities needed to retain deterrence while reducing the numbers of deployed nuclear weapons. The SRAM II strategic air-to-surface missile offers a safer and more effective weapon system to replace the SRAM A, which has been removed from alert status. The Supreme Allied Commander in Europe, General Galvin, has affirmed that an air-to-surface nuclear delivery system with a standoff capability will be the heart of the future nuclear deterrent force in Europe. The SRAM T tactical air-to-surface missile provides just such an effective weapon system.

[Deleted.] None of this restructuring can be carried out without a DOE complex that can provide the nuclear weapon research, development, test, and production necessary while operating safely and ensuring that the environment remains healthy. Nuclear complex plant shutdowns have meant that [deleted] including delaying the incorporation of modern enhanced safety features into the stockpile. In the aftermath of the Savannah River site shutdown, the United States has [deleted.] The New Production Reactor program is absolutely necessary to insure that we will have an assured, reliable supply of tritium for our deterrent in the next century.

An ever safer nuclear weapon stockpile is a major objective. Last December, the House Armed Services Committee Panel on Nuclear Weapons Safety, also known as the Drell Panel, presented its findings on the safety of the nuclear stockpile to the Congress. Although they maintained that the stockpile was safe, they held that it could be safer. DOD fully agrees with the Drell Panel in this regard. We are committed to implementing enhanced safety features into the nuclear weapons stockpile. The support of the Congress will be critical to achieving this objective. At the direction of the Secretary of Defense and Secretary of Energy, the NWC is presently developing charters for the review and oversight groups suggested by the Drell Panel. The NWC will also work with DOD and DOE in the conduct of studies that will review and prioritize the incorporation of enhanced safety features into the stockpile. Clearly, we need a producing DOE complex to implement these safety improvements.

We must not lose sight of the fundamental importance of maintaining a state-of-the-art DOE research, development, and testing capability. As long as the United States relies on nuclear weapons to guarantee its security, a nuclear weapons technology base will be essential to keeping the deterrent credible. Without this base, we can expect neither to respond effectively to the changing global environment, nor to avoid technological surprise.

In the remainder of my testimony I will address the requirements process and the specific DOD needs which this DOE budget is designed to meet.

NUCLEAR WEAPONS REQUIREMENTS

Annually, the Presidentially approved Nuclear Weapon Stockpile Memorandum (NWSM) establishes nuclear weapons requirements needed to maintain the nation's strategic deterrent. It is consistent with nuclear weapon reviews provided by the Joint Chiefs of Staff, the DOD and DOE budgets, and weapon production constraints. I can assure you that NWSM requirements are reviewed very thoroughly at all levels within the DOD and represent our best judgment that the stockpile is properly sized for the military objectives required to fulfill our national policy of deterrence. Our longstanding objective is to provide this country with a stockpile that is safe, secure, reliable and effective.

Our philosophical objective is to maintain a minimum stockpile consistent with military requirements. This goal cannot be achieved without an operating modern nuclear weapons complex that is environmentally safe and in compliance with today's standards. The requirement for an assured supply of tritium to replace that which has decayed in the stockpile continues to focus our attention on the aging Savannah River reactors. Since Spring 1988, when these reactors were shut down, [deleted] resumption of operations at Rocky Flats is critical to meet established stockpile requirements and re-establish the only capability within the country to produce plutonium pits.

Disruptions in the day-to-day operations of each facility in the production complex cascade downward to affect other elements. Of particular concern is the interruption of plutonium operations at Rocky Flats. This has already resulted in delays to the essential modernization of the stockpile. [Deleted.]

STATE OF THE NUCLEAR STOCKPILE

In view of the important role played by this Committee in maintaining a safe, secure, reliable, and effective nuclear deterrent, I have made a commitment to inform you once a year on the state of the nuclear stockpile. I have assembled some statistics which will update those furnished to you in my testimony last year.

On December 31, 1990, the U.S. nuclear warhead inventory consisted of [deleted] the previous year end total.

[Deleted.]

The oldest warhead type is the [deleted]. The oldest individual weapon in the stockpile is a B28 bomb, produced in 1958, making it now over 31 years old. The average warhead age on December 31, 1990 was [deleted] one year earlier, the average was [deleted].

There are [deleted] warhead types in today's inventory; however, within the next three years we will be removing [deleted] warhead types from the active stockpile and introducing [deleted].

[Deleted.]

The [deleted] as GLCM and PERSHING II missiles are destroyed as required by the INF Treaty. [Deleted.]

[Deleted.]

STOCKPILE MODERNIZATION

The President's budget for DOE defense program actions balances the need for the renovation of the fragile and aging nuclear production complex with environmental restoration with the competing goal of maintaining a safe, reliable, and effective stockpile.

As I noted earlier, the disruptions in DOE's production facilities have delayed important modernization objectives. The DOE will deliver only [deleted] provided that Rocky Flats comes up on line by next autumn. [Deleted] for the continued improvements needed for strategic modernization and the incorporation of modern safety, security and use control features into the stockpile. The restoration of a healthy DOE production complex will allow the nation to [deleted].

During the summer of 1990, the Joint staff, in consultation with the Services and the nuclear-capable Commanders-in-Chief (CINCs), conducted a review of CINC nuclear weapon requirements. This review identified requirements through fiscal year 2000. By the end of this period the stockpile of nuclear weapons will be [deleted] below the FY 1990 stockpile level. These reduced requirements will serve as the basis for accelerating retirement of older weapons and reducing the production of new weapons. Adopting this plan will provide the CINCs with a nuclear stockpile of warheads with modern safety and security features by [deleted] although the suspension of operations at Rocky Flats has put that schedule in jeopardy. The stockpile modernization efforts proposed by this Nuclear Weapons Stockpile Plan, however, follow the Joint Staff schedule to the extent possible. The following actions discuss the major changes in this Nuclear Weapons Stockpile Plan from the current stockpile.

STRATEGIC NUCLEAR FORCE MODERNIZATION

By fiscal year 2000, our strategic warheads will decline by [deleted] Minuteman ICBM warhead numbers have been changed to support the current Minuteman force structure plans. To support deactivation of the Minuteman II missiles, the Minuteman II (W56) will [deleted].

[Deleted.] Because of the Rocky Flats closure and the predicted fabrication constraints, [deleted]. These warheads will be given priority when Rocky Flats resumes production.

The CINC requirements for the B83 strategic bomb have been [deleted]. Additionally, all remaining production of the B83 strategic bomb will [deleted].

[Deleted.]

NON-STRATEGIC NUCLEAR FORCE MODERNIZATION

By FY 2000, our non-strategic warheads will decline [deleted].

The SRAM–T (W91) FAD has been [deleted]. It shares the same [deleted].

The technological advantages that a stand-off missile can give to aircraft survivability make the replacement of tactical nuclear bombs with TASM an essential requirement to the nation's deterrent posture. A modern warhead for this missile will meet modern safety and security requirements.

[Deleted.] The Navy has revalidated the need for an advanced depth and strike bomb, the B90, to replace its aging B57 depth and strike bomb. Admiral Kelso, the Chief of Naval Operations, stated in a report to the House Armed Services Committee that "The B90 is important to the nation as a deterrent to nuclear war-at-sea and, should deterrence fail, it provides an extremely effective warfighting capability and a hedge against technological surprise." Pending Congressional agreement with this requirement the Navy has not funded the B90 Nuclear Depth Strike Bomb. [Deleted.]

SAFETY, SECURITY, AND SURVIVABILITY

The Department of Defense places paramount importance on the adequate safety, security and control of United States nuclear weapons and nuclear weapons systems. In fact, we recognize that the incorporation of optimal safety, security and use control features permits improved weapon system effectiveness through enhanced operational flexibility.

Since 1980, modem nuclear weapon safety features have been incorporated in [deleted] the stockpile. Enhanced security features are included on [deleted]. Such features include Insensitive High Explosive (IHE), nonviolent disablement, safe and predictable accident response, and modern use control.

IHE is a very important safety feature of our modernization effort. Its intention is to reduce the risk of scattering plutonium in case of an accident that could potentially detonate conventional high explosives. Today, about [deleted] of the stockpile weapons use IHE. Because of the penalty in weight and size associated with using IHE (it is less energetic than other high explosive materials, therefore, more is needed), [deleted]. We are working, however, to include IHE in all appropriate warheads in the stockpile and expect to have [deleted] of the stockpile outfitted with IHE by the year [deleted].

DOE currently designs warhead electronics such that we can be confident that the probability of detonation in any plausible accident is less than one chance in a million. Currently, these enhanced safety features have been incorporated in [deleted] of the weapons in the stockpile as a result of modern warhead production and the modification of existing warheads. [Deleted] will have such features by the year [deleted].

STOCKPILE IMPROVEMENT PROGRAM

The joint DOD/DOE Stockpile Improvement Program (SIP) was initiated formally by the Military Liaison Committee in 1979. Yearly, each weapon is examined to review its operating environment, service recommendations, results of studies, present SIP efforts, and/or planned retirement/replacement programs.

The Stockpile Improvement Program (SIP) has [deleted].

[Deleted.]

This year, in response to Drell Panel recommendations, the NWC endorsed technical goals for equipping all nuclear weapons with modem enhanced nuclear detonation systems, and for emplacing insensitive high explosives and fire resistant pits into all aircraft-delivered bombs and missiles. The Secretaries of Defense and Energy tasked the NWC to conduct a Special SIP Review of the entire stockpile, with a view of determining the feasibility, potential costs, expected risk reduction, and realistic schedule for achieving these goals.

UNDERGROUND TESTING

Research and development are essential to realizing a safe, secure, and dependable nuclear stockpile. Research and development of nuclear weapons require testing. In the last few years we have witnessed a dramatic reduction in the number of nuclear tests being conducted by our nation. Secretary of Defense Cheney stated in his briefing on the fiscal year 1992 Defense Budget, ". . . I think one of our advantages, without question, is our technology." He was referring not only to the technology used in Operation Desert Storm, but to the technology that supports the entirety of our conventional and strategic forces, including the technology of nuclear weapons. Indeed, he stressed the point that, "America must continue to maintain a diverse mix of survivable and highly capable offensive nuclear forces, as well as supporting command and control assets." We need to test the adequacy of several enhanced safety concepts, and we will need to test the warheads that will incorporate that safety technology for the weapons of the future. The current level of testing may well not be enough to allow this nation to meet these needs.

Over the past decade DOD has endeavored to help the Congress and the public understand the reasons why the continuance of nuclear testing is essential to maintaining a credible deterrent. First, nuclear testing is vital for establishing and maintaining confidence in the operability and reliability of nuclear weapons. Second, we conduct a nuclear test program to improve the safety, security and effectiveness of our nuclear arsenal; in other words, to implement the recommendations of the Drell Panel. This testing allows us to ensure that the highest possible standards for our warheads are satisfied. Third, the United States tests to ensure we understand the effects of a nuclear environment on military systems. This allows us to have confidence in the survivability of our weapons and our supporting C^3I systems. Finally, by continuing to advance our understanding of nuclear weapons design, nuclear testing serves to avoid technological surprise and to allow us to respond to the evolving threat.

The DOD agrees with statements made in testimonies of the National Laboratory directors that recognizes our current dependence on continued nuclear testing at the current 150 kt threshold limit.

SUMMARY

To review my major points, let me summarize:

Deterrence is, and will remain critical to United States national security. To maintain deterrence, DOD depends upon a strong DOE Defense program activity.

Continued modernization of both our strategic and non-strategic nuclear forces is essential.

A safe, secure, and effective nuclear deterrent requires a modernized DOE Nuclear Weapons Complex capable of operating safely and with a minimum environmental disturbance, including: R&D laboratories; nuclear testing; and production facilities.

The Weapons Complex must again function at full capacity in the near future or our defense programs will be compromised.

NEW PRODUCTION REACTOR PROGRAM

STATEMENT OF DR. DOMINIC J. MONETTA, DIRECTOR, OFFICE OF NEW PRODUCTION REACTORS

Senator JOHNSTON. Dr. Monetta.

Dr. MONETTA. Thank you, Mr. Chairman, Senator Domenici. It is, once again, my pleasure to brief you on the New Production Reactor Program.

I would like to submit my testimony for the record and then go through a few summation slides which you have in hand-out form. I will just review them briefly with you.

This will update you on our program, as we gave you the original presentation last year. I believe you have copies of that presentation.

The mission of the program is still to provide capacity in the year 2000 in an environmentally sound, urgent manner, primarily to produce tritium.

This mission has been stated going all the way back to 1978 and reiterated by a number of studies, the most notable of which was the National Academy of Sciences study in 1978.

The quote of the National Academy of Sciences still rings out in our ears. For the record, I will like to read it:

> The remaining useful life of the four production reactors is likely to be equal to or shorter than the time needed to authorize, fund, design, and build new facilities to produce special nuclear materials. If the United States finds it necessary to have a reliable, safe capacity for the production of strategic nuclear materials, then planning for the New Production Reactors should be accelerated.

The bottom line there, Mr. Chairman, is that we no longer have four production reactors. The N-reactor is in dry layup. The K-reactor is anticipated to be started by the end of summer. P-reactor has been terminated, and L-reactor will be upgraded to a standby condition.

So, the question of urgency still rings loudly in our ears. We know that K-reactor will be 47 years old in the year 2000, when the NPR comes on line.

Senator JOHNSTON. Is K at about 50 percent now?

Dr. MONETTA. K-reactor is not operating at all right now, but will be on line somewhere in the late summer timeframe.

Senator JOHNSTON. I mean at about 50 percent?

Dr. MONETTA. Less than that, sir.

Mr. CLAYTOR. Well, it won't be over 50 percent, Mr. Chairman. It may well be at 50 percent. It could be at that number.

The analytical work and the testing work and so on with regard to the gamma heating—you've heard about that, perhaps. It's a cadmium rod, in the control rod area, not in the fuel. This is being examined.

My latest information is I expect we could certainly reach [deleted].

Senator JOHNSTON. Well, let's assume that we get [deleted] out of K by the end of the year. Can that sustain the production lines?

Mr. CLAYTOR. Yes, sir; it will be able to do it. [Deleted.]

Senator JOHNSTON. So, we won't have to have the subs going out without a full complement of weapons?

TRITIUM SUPPLY

Mr. CLAYTOR. The tritium situation is, of course, not nearly as critical as the plutonium situation. [Deleted.] If we don't operate the reactor at all [deleted], we will drop below a working inventory of tritium. If we don't operate a reactor at Savannah River—K-reactor is the one we are planning—we will drop below a working level of tritium. So we would really be in trouble then.

But this has been a controversy that you undoubtedly have read about in the GAO report. We feel we must retain [deleted] margin against unforeseen circumstances that could arise. That is a Presidential requirement.

Senator JOHNSTON. Well, if you get the K-reactor operating this year, how long do you think its useful life will be?

Dr. MONETTA. That is one of the concerns we have. Commercial reactors do not normally run for more than 40 years. Production reactors—we have had 14 of them over the history of the complex—have averaged about 30 years. K-reactor will be 47 years old in the year 2000.

Now, we have gone a long way into making K-reactor more worthy of operation. But that is still a very significant concern of ours.

Mr. CLAYTOR. I completely support that. We have a concern.

If we run K-reactor, it will be safe. We will be sure of that. But its reliability over the long term of 8 or 10 years is certainly questionable because it's so old that we may have to shut it down. That is a real concern.

We do have L-reactor as a backup in the event K-reactor has to go down. Again, the L-reactor is also a very old reactor.

Senator JOHNSTON. Well, let me put it this way.

Is the selection of the technology for the production reactor driven to any important extent by the margin of safety in your supply of tritium?

In other words, there are some who say that the heavy water reactor could come on quicker or later than the MHTGR or whatever. But assuming there is a 2- or 3-year difference—and I don't know which one would be the longer——

Dr. MONETTA. There is substantially no difference in bringing either technology on line. Right now, we've scheduled the heavy water reactor option on a 10-year timeframe, and the first module of a gas-cooled reactor on the same 10-year timeframe. However, the four modules will be all fully operational in about 12 years.

Senator JOHNSTON. On the MHTGR?

Dr. MONETTA. That's right, the MHTGR. So, essentially, we're talking about being in operation with either reactor option by the year 2000. So they are both comparable timeframes.

Senator JOHNSTON. And that is with an adequate margin of safety?

Dr. MONETTA. Both reactors are designed to margins of safety heretofore——

Senator JOHNSTON. I don't mean the reactors. I mean safety as far as the tritium supply is concerned.

Dr. MONETTA. The tritium supply becomes critical depending on which curves you look at somewhere between [deleted]. That is the timeframe whereby K-reactor must be operational, and K-reactor will have to be our only supply of tritium between 1994 and the year 2000, at which time the NPR comes on line to support the K-reactor production and to be able to take the K-reactor off line at some place before the year 2000.

Senator JOHNSTON. Don't get me wrong. I strongly support proceeding with the new production reactor. And we have statements from Admiral Watkins saying that even without any supply, we have enough tritium to last until 1994.

Mr. CLAYTOR. May I clarify that, Mr. Chairman?

Senator JOHNSTON. Please.

Mr. CLAYTOR. We will dip into our reserve, [deleted] if we do not start up the K-reactor later this year. That's what he meant by that statement.

Senator JOHNSTON. That's what he meant. OK.

Mr. CLAYTOR. We don't want to dip into that reserve. That was the controversial issue with the GAO.

Senator JOHNSTON. I certainly agree with that.

Mr. CLAYTOR. That's what he meant.

Senator JOHNSTON. But you feel fairly comfortable, I mean, when you consider that we have a reserve and that we should be able to get K back on line—we hope, we think—and we think it will operate for a period of time, and maybe L-reactor, that if we go ahead and don't dilly-dally, we have an adequate margin of safety for the tritium supply?

Dr. BARKER. Let me put it another way, Senator. We don't have any choice. The best we can do is to bring those reactors up later this year and hope they operate until 2000 when an NPR comes on line.

Dr. MONETTA. That is our basis for the urgency of the new production reactor, that we will be relying solely on K for the better part of the next 10 years.

Mr. CLAYTOR. That's right.

Dr. MONETTA. That is of serious concern to us because that reactor is aging all the time and will be 47 years old when we get the NPR on line. That is significantly older than we will have ever run any production reactor.

That is really where our concern stems from.

So we talk about NPR from a sense of assurance for the future and urgency to be able to support the tritium requirements from the year 2000 to 2040.

Senator JOHNSTON. Really, my question had to do with your choice of technology for the new production reactor and whether that was driven at all by the uncertainty of supply.

ENVIRONMENTAL IMPACT STATEMENT FOR NPR

Dr. MONETTA. No, sir; it is not. It is not.

As we move into current activities, one of the most important current activities that we have undertaken is the public hearings on the EIS. The EIS, which is a 2,100-page document, has been in the public domain since April 10. We are presently moving on to the three sites with 13 hearings in five States in the last 2 weeks of May, in order to bring public comment and public participation into reviewing and looking at our environmental impact statement "to give us input as to what the public's concerns are on this significant Federal action.

This is probably the most comprehensive environmental impact statement ever attempted in this country under NEPA. We are embarking on a public comment period that will be second to none, as far as bringing the public into the process.

That is our significant activity in the next 30 days. While that is happening, we will continue going forward with the preliminary designs on both reactor options. We will move expeditiously on looking at all of the confirmatory development work that is going on in the national labs to make sure that the safety enhancements of both technologies are being well assured and well guaranteed and well documented. We will continue work on the irradiation of the various targets for the gas-cooled and light water reactors and are moving expeditiously forward with testing in the advanced test reactor at Idaho Falls.

So that is our plan of action over the next 12 months or so, as we move toward a record of decision in December of this calendar year.

The two options, just to review for you what they are, are the heavy water and gas-cooled reactor options, with the tritium target work being done for the light water reactor. The EIS looks at those three alternatives, those technological alternatives, of the three sites: Savannah River, Idaho, and Hanford.

The teams that we have set up for the gas-cooled reactor and the heavy water reactor are CEGA, which is the Organization of General Atomics, with Combustion Engineering, Stone and Webster and Burns and Roe, adding subcomponents to that team, and with the construction managers now coming on board as of the middle of last month for the gas-cooled reactor—that's Fluor-Daniel and for the heavy water reactor, Bechtel. The Bechtel team is made up of Ebasco, B&W, Rockwell, and Westinghouse has now been brought in by Ebasco to take on some emergency core cooling work that they are expert in, strengthening that particular team.

RECORD OF DECISION FOR EIS

Senator JOHNSTON. The buck will stop with you on that choice?

Dr. MONETTA. Yes, sir; it will actually be with Admiral Watkins. He is the designated selecting official who will make the record of decision on December 29, 1991. But I will staff him on that.

Proposed activities for 1992 are that we will complete the work for record of decision, which takes us into the first 3 months of fiscal year 1992 and which terminates with the presentation of the EIS to the Secretary of Energy on November 29. With that, there will be a comprehensive safety analysis; there will be an analysis of the various design options, validated by my engineering people; and there will be a comprehensive cost analysis done by Fluor-Daniel for the gas-cooled reactor, and by Bechtel for the heavy water reactor, which will update the total estimated cost work that we gave to you on March 7 and which will confirm exactly for us how much a heavy water and a gas-cooled reactor should cost, based upon these two very capable construction and management organizations.

We believe that they are the finest in the country.

We will then, after record of decision, have an orderly closeout of the nonselected technology option. That will be about a 60-day process. So we will be able to move the fiscal year 1992 funding to be focused completely on the reactor technology of choice and continue to move forward.

NEPA STATUS

As for the NEPA status, which is really what this is all built around and which is driving the actions over the next 60 days, we will close on the public hearing process on June 17. That is the time allotted for the public to give us comments both in oral testimony and in the written part of the process.

We will bring that all together. We will roll all of those comments into the final and present the final to the Secretary of Energy in November of this year. Then we will give him 30 days, which is the minimum amount of time that we can give him, to make a decision. Hopefully, he will give us a decision on December 29 of this year. So we will be able to move into calendar year 1992 with a choice of reactor and a choice of site.

The EIS process actually is two choices: It is a choice of technology and it is a choice of site. Both occur concurrently, in December 1991.

Senator JOHNSTON. Are the site and the technology interdependent?

Dr. MONETTA. No, sir.

The way the EIS is constructed, there are three technologies arrayed over three sites. So the EIS is a site and a technology neutral decision package. The Secretary can, in fact, theoretically pick any technology at any site. They are not interdependent.

This gives him the maximum array of options. What we will then do is proceed into the fiscal year 1992 budget in earnest and the fiscal year 1992 budget is displayed for you on page 10 of the handouts. It essentially will then commit the construction funding, which will be the funding that will move into the remainder of preliminary design, and then move us into finalizing that particular process.

SITE SELECTION FOR NEW PRODUCTION REACTOR

Senator JOHNSTON. There is a move in the House to pick the site. You are probably familiar with that.

I don't favor that.

I am not sure we can resist it, however. But I don't favor it.

Do you have any special arguments that you want to make quickly on that issue?

Dr. MONETTA. I think that is a significant concern to us because it does not allow for an orderly progression of the NEPA process. We are concerned about that happening because what it does not allow us to do, depending on whether it is legislation or a sense of the House, is it does not allow us to conduct an orderly process. Even though we will conduct a process in a way that, depending on what kind of guidance we get out, it will cause a perturbation in the system that we would rather not have to have to deal with.

CONCLUDING REMARKS

We will continue our course of action during this current calendar year and be prepared for a record of decision to move expeditiously in calendar year 1992. We are planning to deal with any combination of site and technology that the Secretary of Energy gives us in December of this year.

PREPARED STATEMENT

So we are prepared to move out in whatever direction that record of decision demands. We are on time and on schedule, and we are holding all of our costs within our cost and schedule plans.

Do you have any questions?

[The statement follows:]

STATEMENT OF DR. DOMINIC J. MONETTA

Mr. Chairman and members of the Committee, I am pleased to appear before you today representing the Department of Energy and in particular the Office of New Production Reactors. I would like to briefly outline for you the status of the New Production Reactors (NPR) Program and our budget request for FY 1992.

Our mission and objectives remain unchanged: to design and construct new production reactor capacity in a safe and environmentally sound manner on an urgent schedule for an assured supply of nuclear materials, primarily tritium, to maintain the Nation's nuclear deterrent capability.

To successfully complete this mission, two primary requirements must be met. The first requirement is to take those steps necessary to support a sound decision about reactor technologies and sites for the Record of Decision (ROD) which is scheduled for December 1991. Accomplishing this includes initiating and managing design activities, confirmatory engineering development, and safety related activities, as well as completing an Environmental Impact Statement (EIS) in compliance with the National Environmental Policy Act. The second requirement is to have the NPR Program positioned so that at the Record of Decision, the Program could move forward without delay to initiate long-lead procurement, complete design, and start construction as soon as possible. Currently, tritium production remains shutdown and the Department is proposing to restart only one of the production reactors at Savannah River in the near-term, with a second reactor placed on stand-by. Future defense nuclear materials production cannot be met indefinitely with our present reactor capacity which will be over 45 years old when new reactor capacity is scheduled to begin production. This Nation's defense policy, for the foreseeable future, calls for nuclear deterrence to remain as an essential element of our overall strategic policy. Thus, the ability to produce tritium is a critical component to fulfilling and sustaining this policy. A proposed, state-of-the-art, new production reactor would provide the means necessary for the safe and reliable production of tritium well into the next century to support our Nation's nuclear deterrence.

To accomplish the NPR mission, the Department's initial preferred strategy, as proposed to the Congress on August 8, 1988, was to proceed with the design and construction of a Heavy Water Reactor (HWR) at the Savannah River Site in South Carolina, a Modular High-Temperature Gas-Cooled Reactor (MHTGR) plant at the Idaho National Engineering Laboratory in Idaho Falls, Idaho, and as a contingency, development of a Light Water Reactor (LWR) tritium target for possible use in the partially completed WNP–1 reactor in Richland, Washington.

This strategy has recently been changed as indicated in the submission of the President's FY 1992 budget request. The Department has decided that the strategy of concurrently designing and constructing two new production reactors at two sites can no longer be supported. The new strategy is to continue the preliminary designs of both the HWR and MHTGR through the Record of Decision in December 1991 and then, depending upon the decision, proceed with the further design and construction of a single chosen technology at a chosen site. The design not selected would be closed-out in an orderly fashion. The light water reactor target development contingency effort will continue until its completion.

Therefore, the most important near-term decision to be made regarding the NPR Program will occur at the Record of Decision. It is essential that the Program be allowed to continue on its present course until ROD. At that time, the Department will select a technology and site utilizing all safety, environmental, technical, and cost and schedule data needed to make the most sound and complete decision possible.

CURRENT STATUS

In FY 1990, we completed the conceptual designs for both the HWR and the MHTGR; initiated preliminary design (Title I) for both technologies; and continued environmental, engineering and safety work. During FY 1991, we will continue with Title I activities for both reactor technologies; begin designs of support facilities; and continue both MHTGR target work and demonstration of the LWR tritium target performance. On April 10, 1991, we released the draft EIS to the Congress and on April 19, 1991, we began a 60-day public comment period which will end on June 17, 1991. During that time, the Department will conduct 13 public hearings in five states (South Carolina, Georgia, Oregon, Washington, and Idaho) regarding this proposed action.

The largest effort within the NPR Program, in addition to the EIS, has been the initiation of the reactor designs. Conceptual design was completed for the MHTGR and a preliminary design contract awarded to CEGA, a design team consisting of General Atomics, Combustion Engineering, Stone & Webster, and Burns and Roe. After an exhaustive review of the conceptual designs for the HWR, Ebasco Services, Inc. was selected to continue with preliminary design of this technology. Ebasco is joined by Babcock & Wilcox, Combustion Engineering, Rockwell International, Westinghouse Advanced Energy Systems, and Battelle Memorial Institute. To complete our design and construction teams, contracts were recently awarded for construction management. Fluor-Daniel was selected to manage the MHTGR construction effort and Bechtel National, Inc. was selected for the HWR. Like the design contractors, once the Record of Decision is completed, the work associated with the non-selected technology will be closed-out.

In the immediate future, we will proceed with those activities necessary for preparation of the final EIS, due in November 1991, concurrently with engineering development, confirmatory testing and project design efforts. The pace of activities will continue to increase and be aimed at supporting detailed design and construction as soon as possible after the Record of Decision.

BUDGET OVERVIEW

The requested FY 1992 funding level of $500 million consists of $152.3 million in operating budget authority, $336.5 million in construction funds for design and $11.2 million for capital equipment. These funds are needed to support the continued broad range of activities necessary to bring new production reactor capacity on line. With the continuation of preliminary design for both reactor technologies and initiation of the design of support facilities, funding is lean and remains a critical factor.

The FY 1992 operating budget levels are required for the following activities:

—For confirmatory development, the request is $21 million. This funding will be used to continue verification of design and safety requirements.

—The tritium target development funding request is $46 million ($21 million for MHTGR and $25 million for LWR). This funding will be used for continued irradiation testing in DOE's Advanced Test Reactor and further diagnostic efforts.

—The request for environmental compliance is $7 million which will be used to issue a final EIS and continuation of environmental compliance activities.

—For the safety review process, the request is $15 million for continued refinement of safety requirements and continued independent reviews of safety issues and documentation resulting from design activities.

—Finally, a request of $63.3 million for Program Direction and Support reflects the funding necessary for federal manpower and contractual support for the NPR Program at headquarters and the various sites.

A total of $347.7 million in construction and capital funds are needed in FY 1992 to continue with facility engineering and design. Conceptual designs have provided detailed assessments of major concept issues, trade-off studies, and evaluations; identified engineering development requirements; developed revised cost estimates; and provided an initial project schedule. Preliminary design takes the baseline established in the Conceptual Design Report and the Requirements Document and further defines the requirements and criteria which will govern the detailed design (Title II). Title I design, which will continue through FY 1991, will be funded using capital construction monies, although no actual construction would take place until after the Record of Decision. Reviews of the current schedules for the outyears are being conducted and a revised schedule to reflect the funding realities of the Program will be developed.

Mr. Chairman, to conclude, I stated last year that the NPR program was both an ambitious and necessary endeavor, and so it remains. Our FY 1992 request of $500 million will provide funding to continue the mission of providing new production capacity for eventual replacement of the current production reactors. The designs and options for the proposed new production reactor capacity are very flexible and can encompass a broad range of requirement scenarios. Fully funding the NPR Program for FY 1992 allows the technology options to proceed so that the most sound and complete record of decision can be made. Because the need for nuclear deterrence will continue for the foreseeable future, it remains the responsibility of the Department, and the Congress, to provide a highly reliable, long-term, assured supply of tritium. We have the opportunity to design and reconfigure the Nation's weapons production complex in order to eliminate many of the old problems and chokepoints that have caused us concern. With your continued assistance and support, I am confident that the NPR Program will succeed in taking advantage of this opportunity and together we will accomplish the mission of assuring the Nation a safe and reliable nuclear deterrent.

MISSION

TO PROVIDE NEW PRODUCTION REACTOR CAPACITY IN A SAFE AND ENVIRONMENTALLY SOUND MANNER ON AN URGENT SCHEDULE FOR AN ASSURED SUPPLY OF NUCLEAR MATERIALS, PRIMARILY TRITIUM, TO MAINTAIN THE NATION'S NUCLEAR DETERRENT CAPABILITY.

MISSION NEED

NATIONAL ACADEMY OF SCIENCES (1987) CONCLUDED:

"...THE REMAINING USEFUL LIFE OF THE FOUR PRODUCTION REACTORS IS LIKELY TO BE EQUAL TO OR SHORTER THAN THE TIME NEEDED TO AUTHORIZE, FUND, DESIGN, AND BUILD NEW FACILITIES TO PRODUCE SPECIAL NUCLEAR MATERIALS. IF THE UNITED STATES FINDS IT NECESSARY TO HAVE A RELIABLE AND SAFE CAPABILITY FOR THE PRODUCTION OF STRATEGIC NUCLEAR MATERIAL, THEN PLANNING FOR THE NEW PRODUCTION REACTORS SHOULD BE ACCELERATED..."

MAJOR PROGRAM OBJECTIVES

- PROVIDE THE PRODUCTION CAPACITY TO SUPPLY TRITIUM AND OTHER NUCLEAR MATERIALS RELIABLY AND ON A TIMELY SCHEDULE.
- PROVIDE A LEVEL OF SAFETY AND OF SAFETY ASSURANCE THAT MEETS OR EXCEEDS THAT OFFERED TO THE PUBLIC BY MODERN COMMERCIAL NUCLEAR POWER PLANTS.
- MEET OR EXCEED ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS OR STANDARDS FOR ENVIRONMENTAL COMPLIANCE.
- MANAGE THE PROGRAM IN A COST EFFECTIVE MANNER.

CURRENT ACTIVITIES

- CONTINUE WITH PRELIMINARY DESIGN (TITLE I)
- CONDUCT PUBLIC HEARINGS, RESOLVE PUBLIC COMMENTS AND PREPARE FINAL EIS
- CONTINUE IMPLEMENTATION OF THE SAFETY REVIEWS
- CONTINUE AND PARTIALLY COMPLETE CONFIRMATORY ENGINEERING DEVELOPMENT
- CONDUCT IRRADIATION TESTING AND DIAGNOSTIC EFFORTS TO DEMONSTRATE TRITIUM TARGET PERFORMANCE FOR THE MHTGR AND FOR THE LWR

OPTIONS

- REACTOR TECHNOLOGIES:
  - HEAVY WATER
  - MODULAR HIGH-TEMPERATURE GAS-COOLED
  - LIGHT WATER
- SITES:
  - SAVANNAH RIVER
  - IDAHO
  - HANFORD

MHTGR DESIGN TEAM

- CEGA - ENGINEERING (AWARDED - AUGUST 10, 1990)
    - GENERAL ATOMICS - CORE, TARGETS, FUELS, CIRCULATORS
    - COMBUSTION ENGINEERING - VESSELS, PIPING, COMPONENTS
    - STONE & WEBSTER - NUCLEAR ISLAND (REACTOR STEAM BYPASS)
    - BURNS & ROE - FUEL/TARGET SUPPORT FACILITIES
- FLUOR-DANIEL - CONSTRUCTION MANAGEMENT CONTRACT (AWARDED - MARCH 15, 1991)

HWR DESIGN TEAM

- THE EBASCO SERVICES INC. TEAM - ENGINEERING
  (AWARDED - AUGUST 10, 1990)
  - EBASCO SERVICES INC. - AE/INTEGRATOR
  - BABCOCK & WILCOX - REACTOR DESIGNER AND MANUFACTURER
  - ABB COMBUSTION ENGINEERING - CONTROL ROOM AND SAFETY SYSTEMS DESIGNER
  - ROCKWELL - REFUELING/FUEL HANDLING
  - BATTELLE - ALUMINUM/FUEL SEVERE ACCIDENT ANALYSIS
  - WESTINGHOUSE - EMERGENCY CORE COOLING AND CONTAINMENT
- BECHTEL - CONSTRUCTION MANAGEMENT CONTRACT
  (AWARDED - MARCH 15, 1991)

PROPOSED ACTIVITIES

FY 1992

- ISSUE FINAL EIS FOR RECORD OF DECISION
- OBTAIN RECORD OF DECISION
- COMPLETE PRELIMINARY DESIGN (TITLE I) FOR SELECTED TECHNOLOGY
- ORDERLY CLOSE-OUT OF NON-SELECTED TECHNOLOGY
- COMMENCE DETAILED DESIGN (TITLE II)
- CONTINUE CONFIRMATORY DEVELOPMENT
- PROCEED WITH INITIAL REVIEW OF PLANT DESIGN AND INTEGRATED SAFETY ANALYSIS REPORT
- CONTINUE WITH TRITIUM TARGET DEVELOPMENT WORK FOR THE LIGHT WATER REACTOR

NEPA STATUS

• NOTICE OF INTENT	SEPTEMBER 1988
• PUBLIC SCOPING HEARINGS	NOVEMBER-DECEMBER 1988
• IMPLEMENTATION PLAN ISSUED	JANUARY 1990
• DRAFT EIS	APRIL 1991
• PUBLIC HEARINGS	MAY 1991
• FINAL EIS	NOVEMBER 1991
• RECORD OF DECISION	DECEMBER 1991

FY 1992 CONGRESSIONAL BUDGET REQUEST
(DOLLARS IN MILLIONS)

PROGRAMMATIC ACTIVITIES	FY 1992
OPERATIONS	
CONFIRMATORY DEVELOPMENT	$ 21.0
TRITIUM TARGET DEVELOPMENT	46.0
ENVIRONMENTAL COMPLIANCE	7.0
SAFETY REVIEW PROCESS	15.0
PROGRAM SUPPORT	4.5
PROGRAM DIRECTION	58.8
OPERATIONS TOTAL	$152.3
CAPITAL EQUIPMENT	11.2
CONSTRUCTION (DESIGN)	336.5
TOTAL	$500.0

MAINTAINING CURRENT COURSE

- EXTEND AVAILABLE OPTIONS TO ENSURE THAT THE MOST SOUND AND COMPLETE DECISIONS CAN BE MADE (TECHNOLOGIES/SITES)
- ALLOW THE PROGRAM TO BE IN AN OPTIMAL POSITION TO COMPLETE DESIGN AND COMMENCE CONSTRUCTION
- WILL ULTIMATELY PROVIDE AN ASSURED PRODUCTION CAPACITY FOR THE FUTURE

POTENTIAL FOR UNAUTHORIZED MISSILE LAUNCH

Senator JOHNSTON. I have just a quick question or two before I have to go to vote.

You spoke of the PAL's, Dr. Barker. Do you have any concern about accidental launch or unauthorized launch?

Dr. BARKER. Of ballistic missiles, Senator?

Senator JOHNSTON. Yes.

Dr. BARKER. Personally, I do not.

The land-based missile systems actually have a PAL-like device [deleted]. Information that is not present inside the launch silo must come in from outside in order to permit the launch process to work.

With respect to sea-based ballistic missiles, I had an opportunity within the last year to remind myself how many people are involved in the launch process aboard ballistic missile submarines, and the number of people that would be required to conduct an unauthorized launch of a submarine-launched ballistic missile is incredible. Under those circumstances, I have no concerns about that.

Senator JOHNSTON. How about for the Soviets?

Dr. BARKER. I don't know the details. My impression, based upon personal observation, personal dealings with the Soviets, as well as their reputation, is that they have taken very particular care with nuclear systems.

Senator JOHNSTON. Excuse me. I had better go and vote. As interested as I am in this subject, if I don't leave now, I'll miss the vote.

Be right back.

[A brief recess was taken.]

Senator JOHNSTON. Dr. Barker, you were saying that you were not totally familiar with what the Soviets were doing but that from knowing them, you would expect that they probably do have something comparable?

Dr. BARKER. I believe they are very careful with their nuclear weapon systems, maybe stemming from the days when they were not quite sure how the weapons would be used if they lost control over them. That is probably still a valid concern.

Senator JOHNSTON. Who would be the expert in our Government to ask about that?

Dr. BARKER. Obviously you should go to the intelligence community. They would be prepared to give you the best assessment we have, but fully recognize that any assessment that we have is going to be less than complete.

As you are well aware, I am sure, Senator, we have just begun to do an assessment of U.S. use control in the committee that is chaired by Jeanne Kirkpatrick, which had its first meeting this week. We will be meeting over the next year to review the whole issue of U.S. use control.

One of the things that committee will be looking into as well is what is our understanding of Soviet use control and practices.

STOCKPLE MEMORANDUM

Senator JOHNSTON. Has the President approved the stockpile memorandum?

Dr. **BARKER**. He has not yet approved the stockpile memorandum. It has not yet reached his desk, but it is almost there.

Senator **JOHNSTON**. So these are really preliminary numbers?

Dr. **BARKER**. Yes; but I don't expect much change.

IMPACT OF REDUCED FUNDING ON THE TECHNOLOGY BASE

Senator **JOHNSTON**. How does the declining level of funding in the testing program impact the technology base at the weapons labs?

Dr. **BARKER**. I think Mr. Claytor is probably the one to answer that question, Senator.

Mr. **CLAYTOR**. Well, it obviously has an impact in that the dollar figures that are reduced in the laboratories, in fact, mean fewer people. That's part of it. Also I think part of it is one of the attractions in retaining the high caliber of personnel in the RD&T program is the testing. It is very clear that some of the incentives for retaining these people are lost if they cannot test their design work. That is a problem.

I am sure Senator Domenici could attest to that at Los Alamos. That has been explained to me many times by the lab directors.

Dr. **BARKER**. I was a nuclear weapons designer once. And I can say that you spend months doing very, very elaborate computer calculations that are based upon approximations of real physical laws and you count very, very much on those tests to let you know whether the models are accurate. Time and time again nuclear weapons designers are taught a little humility by the fact of learning that the codes are far from perfect.

I would like to comment, if I might, a little further.

We are facing an era of significant challenges to the test program. One of the conclusions of the Drell Panel was that we should be more aggressive in our development of enhanced safety features for nuclear weapons. As we move into a world where flexibility is going to be a critical component of our nuclear capability, the ability to move forces rapidly from one place to another in the world, nuclear weapon safety becomes even more important and we may need the kinds of features that do not yet exist.

Nuclear testing is going to be critical to proving that those enhanced safety concepts still allow a nuclear weapon to perform properly.

We have a call from the Congress to pursue a program of nuclear test ban readiness. If one is going to take seriously the idea that we may have to, at some time in the future for political reasons and contrary to technical advice, limit testing even further, we need to understand even better what the limits are of our capabilities without testing. How can we project performance even better, beyond what we can do today?

The only way you can advance the state of that art is to do testing of a particular kind, to explore the limits of what you can do. At the same time we, in the Defense Department, are looking for enhanced safety; at the same time you are exploring test ban readiness concepts. We have got new weapon systems that we desperately need—SRAM II, to enhance the safety for the SRAM A missile. There is the SRAM–T, the tactical standoff missile. We need that.

RESEARCH, DEVELOPMENT, AND TESTING

Senator **Johnston**. Is the budget request adequate on those areas?

Dr. **Barker**. Yes; because those programs will get the priority.

But I think the laboratories are going to be hard pressed to conduct an aggressive R&D program on safety features, the test ban readiness program, testing adequate to meet new builds, as well as what we call stockpile confidence tests. We try to take one weapon per year out of the stockpile and test it, to see if it is still performing the way we think it does. We always do a test like that for our new weapons that go into production.

So, all of those demands put a real strain on the Department of Energy.

PIT REUSE

Mr. **Claytor**. I would add that another concept that I know you have heard about—pit reuse: the possibility of taking the pit from an old weapon, such as a Poseidon, and using it, in lieu of making a new pit. That program has some promise and we encourage that. But that requires a substantial amount of testing to make sure that the weapons will function correctly.

Dr. **Barker**. I would like to modify my answer to the question.

I think in fiscal year 1992, we can probably pursue all of those programs at the level of testing that is asked for. I am not sure that we can sustain that low a level of testing and meet those requirements over the long haul.

NEW PRODUCTION REACTORS COST ESTIMATES

Senator **Johnston**. Dr. Monetta, what is the total project cost estimate for both the HWR and MHTGR technologies? Do you have a funding profile for those?

Dr. **Monetta**. The funding profile for each reactor is about $5.5 billion. That is the analysis we have done on the conceptual designs.

Now that analysis is a comparison of essentially apples and oranges and we have to be real careful about that.

What we have is a heavy water reactor that is essentially twice the size of a gas-cooled reactor in that total estimated cost study that we proposed, that we submitted on March 7. The heavy water reactor is the original design, as we conceived it over 3 years ago, about 2,500 megawatts thermal, which is [deleted] of production per year; the gas-cooled reactor is 4 modules, which is about 1,400 megawatts thermal, [deleted] of tritium per year.

So, even though both reactors are of the same cost, one reactor is essentially twice as large as the other.

Senator **Johnston**. Do you mean in terms of thermal or output?

Dr. **Monetta**. In terms of thermal and of output.

What we are doing now, at the request of——

Senator **Johnston**. With the MHTGR, are you talking about the four modules total?

Dr. **Monetta**. Yes.

What we are doing now is to update those numbers to come up with an 8-module MHTGR cost analysis, so that we can compare apples with apples.

So what we will have within the next 60 days is an 8-module gas-cooled reactor, compared to an 8-module heavy water reactor, which will show the total estimated costs of both machines.

Then we will overlay on that for a record of decision a total program cost for each machine, [deleted]. We will also then come up with a total life cycle cost of both machines.

Senator JOHNSTON. Is the revenue from the sale of power included?

Dr. MONETTA. The total life cycle costs will integrate the power output of the gas-cooled reactor and the power output of the light water reactor. The heavy water reactor does not produce power.

That will then show a cost for the entire 40 years of each of the three machines—light water, heavy water, and gas—knowing full well that only two of the reactor options, light water and gas cooled, produce power and the heavy water does not.

That will cause some kind of balancing effect in the total life cycle costs of the programs. The total estimated costs will be different at that point, because we'll be comparing an 8-module gas-cooled reactor against a heavy water reactor of the same output.

RECORD OF DECISION FOR NPR

Senator JOHNSTON. Is cost your principal determinant at this point?

Dr. MONETTA. No; cost will not be the principal determinant.

The determinants that will go into the record of decision are four, one of which is the EIS itself, which will display all of the options—three technologies across three sites—and look at the environmental impact of each of the technologies at each of the sites.

A second component will be an analysis of the requirements that we laid on the designers 3 years ago and we will analyze how effective they have been in the meeting of those requirements.

A third component will be an independent safety analysis that my oversight group will do, to look at how safe each of the reactors are, making sure that they meet the minimum expectations of safety and how far beyond those minimum expectations they, in fact, go.

A fourth component will be the cost component. It will be a total cost of the program, as far as construction dollars go, and in life cycle, and it will be a comparison of that against the schedules for those two reactor technologies.

Senator JOHNSTON. Now your requirements, your principal requirement is what—making the tritium, obviously?

Dr. MONETTA. The principal requirement is an assured supply of tritium and in an environmentally sound manner, at the safest possible level. Those are the requirements of the program.

Senator JOHNSTON. You are not really concerned at this point, then, as to whether the technology will work in either reactor? You have a high degree of confidence in both?

Dr. MONETTA. We have a high degree of confidence that both technologies will work. We have different concerns about some of the supporting facilities in each system. So we are working on that through our laboratories now, to analyze and be assured that those things are carefully set up.

Senator JOHNSTON. The supporting systems being?

Dr. MONETTA. We have in the gas-cooled case a target and fabrication facility that we need to build and make production runs of modular high-temperature, gas-cooled reactor targets and fuel. We have to make sure that we can stand up a full production capability in that area.

On the heavy water side, we need to make sure that the support facilities, the specific one, is a detritification facility that we need to build, which will be a facility to clean the heavy water that the new production reactor heavy water option will, in fact, contaminate, with tritium. We need to be able to take that heavy water, process it through a very large complex distillation facility, and recover the tritium that's in it.

Right now, that does not happen with the K-reactor because the K-reactor does not have a containment vessel. So we don't capture in the heavy water that tritium. We have to build that facility.

That facility is a state-of-the-art facility that we are, in fact, designing now at Savannah River. That facility will cost us probably close to $300 million to build.

We have to make sure that it operates as efficiently as we think it will be, so that we can bring back the heavy water to the machine on a cyclic basis, and that it will be clean, so that we won't have the tritium contamination going into the containment vessel and causing contamination of the workers.

Senator JOHNSTON. Is that the safety requirement that you were concerned about?

Dr. MONETTA. Yes; it is.

MHTGR TECHNOLOGY

Senator JOHNSTON. What are your safety problems in MHTGR?

Dr. MONETTA. The safety problems there are different. We have to assure that the designs that come out of the work that the British originally did with gas-cooled reactors—they were carbon dioxide cooled—that the work that was done at Fort St. Vrain and Peach Bottom can, in fact, be moved forward and that the reactor that is being designed meets all of those concerns and expectations, and that we do, in fact, not have any graphite problems in that reactor. Up to this point in time, we believe that we have been able to assure all of those concerns.

Senator JOHNSTON. Well, MHTGR is not so much a problem with safety as an engineering problem that you will work out?

Dr. MONETTA. It is a problem of reliability on that machine.

One of the things we are doing now is making sure that the reliability that has been proposed, in fact, can be guaranteed.

Senator JOHNSTON. When I asked earlier if there was a high degree of confidence that this will work, you indicated that was the decision with MHTGR. In heavy water reactor you have a problem with safety. There are no real problems with safety of MHTGR, but you want to be sure that the engineering will work as advertised. Is that it?

Dr. MONETTA. We want to make sure in each of the designs that we can meet all of the expectations of the requirements documents.

We can meet the expectations for safety in both, which calls on a minimum level of safety in both machines.

We want to make sure that we have two machines that can be designed to a certain reliability standard. We want to make sure that we have two machines that meet all of the environmental requirements that we have been proposing for those machines and postulating for the year 2000 and beyond.

So each of the machines impacts our requirement document differently. But, while our requirement document essentially says to both designers these are the minimum expectations as far as safety, environmental benignness, cost and schedule, and design and reliability that you must meet. Each of them gets different——

Senator JOHNSTON. I know they are different. That is what I'm asking. With MHTGR, it's reliability. With the heavy water reactor, it's safety. That's sort of the weak link, or the unanswered question.

Dr. MONETTA. That's correct, sir.

Senator JOHNSTON. Now, to what extent does the demonstration of a new and potentially very valuable technology, in the case of MHTGR, impact on the decision?

Dr. MONETTA. That technology is not as new as one might think. That technology has been around in Britain for the better part of 25 years, and we have been looking at that technology inside of the Department of Energy for the better part of 15 years.

Senator JOHNSTON. Yes; we've been funding it out of this subcommittee.

Dr. MONETTA. Yes, sir.

Senator JOHNSTON. But to proceed with a new demonstration is certainly a great leap forward. I want to make clear that I am not trying to plead for either technology. I am just wondering whether that goes into your calculus.

Dr. MONETTA. Yes; it does. And we feel confident that we can build either machine to the reliability requirements and to the safety requirements that we have proposed for ourselves.

Senator JOHNSTON. Well, if that is so—and there is a very special pleading on all sides on this thing, if one won't work and the other won't work, and it's not safe and all of those things, and I am not the expert, you are the expert—if we can get a demonstration of a machine that can be mass produced in 400 megawatt increments and be, as they say, inherently safe, if that is so, then that would certainly be a very valuable contribution to the nuclear option is this country.

If it costs too much or is not reliable, then it would be a great deficit to the country.

So I would just make that comment. I am sure that is not the first time you have ever thought of that. But I just wanted to mention it.

Dr. MONETTA. I don't have any strong concerns about the reliability of either machine. I think we can build either technology to the level of reliability that we need to make sure that it is a production machine for the better part of 40 years, between the years 2000 and 2040. That is one of the things that our engineers are, in fact, building into these designs now.

Senator JOHNSTON. I must say that is a very exciting and weighty decision that you are going to have to make.

THE NEPA PROCESS

Dr. MONETTA. One of the things I wanted to amend in your last question was your question about the NEPA process. One of the things I am very concerned about is that we do not prematurely truncate the NEPA process.

One of the things that we have been doing over the last 3 years is we have been trying very, very hard to make sure that the people who live around these sites know that this particular EIS here is, in fact, a very legitimate attempt to analyze all of the options at all the sites and give full and open analysis to those options. So we are very much against having anything happen that will cause that particular process to be prematurely truncated.

I wanted to make sure that you understood that was my position.

Senator JOHNSTON. Well, I understand that and I share that view, because I think some have indicated that such an attempt to be a violation of the NEPA laws. These jurisdictional conflicts and potential violations of environmental laws could create a significant delay. We don't want that to happen.

We are concerned about that. Delay, I think, is the principal problem here, either through lawsuits or through jurisdictional disputes.

Dr. MONETTA. And right now, we are exactly on time over a 3-year schedule. So I am not looking for anything that would cause any delays in that process.

Senator JOHNSTON. Gentlemen, I have some written questions which I will include in the record for your response. I wish Senator Domenici had the time to sit and listen to me ask them all and have you give answers to them, but he has been very patient here. So I will yield to him.

Is there nothing else I need to hear—do I need to hear any of your questions?

TECHNOLOGY TRANSFER

Senator DOMENICI. Well, maybe just one thrust, just an observation and an idea.

First, Mr. Chairman, I have a series of questions regarding the technology transfer funding. People hear us talk about it and think that we have arrived at the conclusion. But it is the most important thing going in the national labs, and I want you all to know that I put it in perspective. But I do worry about us trying to move the labs back to a more single-purpose approach, even though I am worried about its mission.

I think you get better scientists and better receptivity if that lab is a little bit diversified. So I am very hopeful that we won't have to move in the direction of controlling the activities by the mission and that we do get some private-sector joint ventures and partnerships with these great laboratories.

Having said that, let me tell you that I do not usually ask administration officials after they have gone through the OMB budget review process to tell me what they asked OMB for and didn't get.

In fact, I discourage it, although many people around here ask it and I don't know whether you are under instructions not to answer that kind of question.

Senator JOHNSTON. I think he is just getting ready to ask you. [Laughter.]

DRELL PANEL REPORT RECOMMENDATIONS

Senator DOMENICI. Yes; I am going to do so. Let me te you what bothers me. There are a couple of things.

First, let me ask you this question.

You have indicated that you are familiar with the Drell Panel recommendations.

Dr. BARKER. Absolutely.

Senator DOMENICI. First of all, I think they are rather exciting, for a number of reasons. The chief proponent of the study used to be against a lot of things that he is now recommending. I think that is rather exciting.

Mr. Chairman, not to say the least, he is recommending unequivocally that we start the testing process—not the testing process—he is saying that we have to go back out to where we are greatly limited because of test bans. He is saying that for future safety, we have to start doing more.

That is very interesting, coming from him and that panel.

You say that you are going to start to recommend implementation at the end of the year. Then you went through a process of getting it in-house and making recommendations. Then you ticked off a few things.

But there are about 70 recommendations. Only a few have to do with internal new deputy secretaries and the like. You told us that you are not very interested in those because you think you already have them. So I am not arguing with you on that.

But on the others, there are just a myriad of recommendations regarding ongoing safety and future safety, which could go even to the question of how do you design weapons in the future, not only making sure the entire weapons complex is as safe as possible, that the weapons arsenal is as safe as possible.

Let me ask you this question.

I note that the laboratories are going down in numbers—6 percent, 500 or so scientists could be removed from the three labs—and you indicated that part of that was because you had to take some of the money and put it into high-priority items, like cleanup, waste, and other things.

What if we are of the opinion that by the time we get around to implementing the Drell Panel recommendations—and it could very well be, as I do see it, that the labs will be back on a slight growth path to meet the panel's recommendations for the foreseeable future. That could be, could it not, that instead of the laboratories coming down in size, they might have to stabilize or go up slightly if we are going to meet all of these Drell Panel recommendations on safety?

Dr. BARKER. It's possible; yes.

RESEARCH, DEVELOPMENT, AND TESTING

Senator DOMENICI. Now, why would we reduce the laboratories strength so much this year and then come back with your recommendations and maybe have to build it back up? If that question is incorporated in this one—as a lawyer, a trial lawyer, I never asked questions when I didn't know what the answer was. But I am kind of worried about this.

Did you recommend as low a funding for the RD&T for the laboratories and their personnel as you finally got?

Mr. CLAYTOR. Yes; I think we did, Senator. I don't remember precisely.

Let me answer you this way. I was not in on the initial budget process. But we were forced with a constrained limit for the Office of Defense Programs to arrive at a balanced program. The balance was within our production complex.

Senator DOMENICI. Let me do this because I don't want to take too long.

Mr. CLAYTOR. It was a real problem for us to find a balance. That was the issue. We elected to effect a cut to RD&T. I think that is a fair answer.

Admiral BARR. Yes, sir.

Senator DOMENICI. Admiral, is it fair also to say if your allocation in 053 had been higher, you would have welcomed not having to reduce some of this RDT&E activity? Is that a fair statement?

Admiral BARR. If there was more funding available, Senator, we could have spent it in a very useful fashion. Let me put it that way.

Senator DOMENICI. OK.

I guess what I'm concerned about is this, and I'll be honest with you.

I think we could go to the Defense Subcommittee and ask for a little more money to go to 053, which is arcane, but that's what comes to this subcommittee, for defense work, nuclear, which is all of this that we have been talking about. But I think we would have to know why and what we are asking for.

I guess I am saying that if you need OMB's permission, we'll go get it for you. But we need to know what we want to go and ask them for, if we are going to, to take some money out of their big 050 account and give it to us.

Am I right in assuming that you really were constrained by somebody giving you the big number?

Admiral BARR. Yes, sir.

Senator DOMENICI. That has happened to all of defense, except in this case we are talking about nuclear safety, the safety of the weapons, which may be getting a little bit of short shrift in this—the long-term program and planned safety of the weapons arsenal itself and future safety.

DRELL PANEL REPORT

Admiral BARR. Sir, if I could make just one point.

The Drell Panel report, of course, came out after the 1992 budget was finalized in the Department.

Senator DOMENICI. The Drell report, which is a very comprehensive report on just the safety of the arsenal itself, now and in the future, came out after they had made this allocation, this 050 to 053.

B–90 FUNDING REALLOCATION

Senator JOHNSTON. How about some of the B–90 funds? Do you need those for safety?

Mr. CLAYTOR. Well, sir, what we would propose to do with the B–90 funds is use them, frankly, for our highest priority work right now, which would be in our production and surveillance budget—not to discount the need for the work in the laboratories, because we have many, many severe problems. We have a W–79 requirement, which the Defense Department has placed on us, which we do not have funded. We have a Pantex problem with returned weapons, where we need to have adequate capabilities to deal with these many returns. We have a number of health, safety, and environmental requirements in the weapons complex that we need to deal with. If we were to retain the money, that would be where we would primarily use those funds.

Now, I do not discount at all the importance of the RD&T money. But that would be my judgment on the priorities.

Senator JOHNSTON. The Drell recommendations came in after the budget?

Mr. CLAYTOR. They did; yes.

Senator JOHNSTON. Those recommendations would not change your priorities with respect to these other things having a higher priority?

Dr. BARKER. The argument that Senator Domenici has made is a broadly based argument that sort of concludes that it makes sense that one ought to have more resources in this area—I am not going to disagree with him—consistent with supporting the President's budget. What the Nuclear Weapons Council has embarked upon at the direction of the Secretary of Energy and the Secretary of Defense is an attempt to identify the specific projects and the kinds of resources that will be required to implement them. So, basically, to build up a program from the bottom up is a surety enhancement program based upon identification of specific subelements. That is a big order, a tall order.

But, hopefully, when we would be done, we would be able to say how many more nuclear tests, how many more scientists, how many more engineers would be necessary to implement this program on a specific time line.

Senator DOMENICI. Now this program is, what you are referring to in this program is the Drell Panel recommendations.

Dr. BARKER. Correct.

Senator DOMENICI. Which, in answer to the chairman's question, are not currently in the mix.

Dr. BARKER. They were not part of the input into that process.

Senator DOMENICI. So you would still have some of those other priorities, but you might need some more money if you were going to implement this?

Dr. BARKER. We might; yes.

NATIONAL LABORATORY CAPABILITIES

Senator DOMENICI. You indicate that the Secretary recognizes that these laboratory capabilities had been changing, that they are being diminished in the process thus far, and that a group of experts—you called them the Secretary of Energy Advisory——

Mr. CLAYTOR. I think that is my testimony.

Senator DOMENICI [continuing]. Yes; your testimony, Mr. Claytor—that they are reviewing this and are going to make recommendations. What are they going to recommend regarding——

Senator JOHNSTON. Excuse me, but I have to leave and take care of something back at the office.

Senator DOMENICI. Yes; I have to leave, too.

Senator JOHNSTON. Gentlemen, thank you for your excellent testimony, as usual.

Senator DOMENICI [presiding]. I will do this last point and then we'll recess.

Mr. CLAYTOR. All right. sir, did you want to know what they are going to recommend?

Senator DOMENICI. No.

Mr. CLAYTOR. Then I'm sorry, but I didn't understand your question.

Senator DOMENICI. I'm asking this.

Your statement here says that they are out looking at some things. What you said is responsibility, roles, and responsibilities of these laboratories, changes that might be necessary in those two qualities.

SECRETARY OF ENERGY ADVISORY BOARD

Mr. CLAYTOR. Yes, sir; that is the Secretary of Energy Advisory Board. It has a task force working on the future of the laboratories. They are examining a way of preserving that capability. So I think it will look beyond the core mission that we need to preserve, that Dr. Barker has emphasized, and look at other missions for these laboratories, which are high-technology missions, which will preserve the great technical strength. That is the thrust of what they are trying to do. They are, hopefully, going to come up with some great ideas for us. But I don't know what they will have.

Senator DOMENICI. Well, I am hopeful on that. Clearly, it seems to me they should.

Let me just ask one last question. What kinds of scientists are these that are doing that, distinguished?

Mr. CLAYTOR. On this board?

Senator DOMENICI. Yes.

Mr. CLAYTOR. Dr. Foster, I'm sure, is one of those advising this board. Dr. Lew Allen, who is the head of the Jet Propulsion Lab is another. I forget all the names, but the director of the Scripps Institute is the head of this. There is Dr. Freeman.

Senator DOMENICI. Can we get that list for the record?

Mr. CLAYTOR. Absolutely.

Senator Domenici, we will give you the list of the people that are serving on this panel. It's a very distinguished group. I had the opportunity to speak before them, and they asked a lot of very hard questions. They are really probing.

We will get you a list.

Senator DOMENICI. OK.

Would you supply for the record a little bit more detail of what they have been charged to do and when you might expect certain kinds of activities. Are they going to be having hearings or making interim reports? I would kind of like to know so that somebody could be following it to the extent that we can from this end.

That is very important.

I don't want to be parochial, but as you know, I happen to have two out of three of these labs in my State. It is pretty tough.

Mr. CLAYTOR. There are 16,000 people there. I'll get that for you, Senator.

[The information follows:]

SECRETARY OF ENERGY ADVISORY BOARD

The purpose for establishing the Secretary of Energy Advisory Board (SEAB) Task Force on the Department of Energy (DOE) National Laboratories is to develop a set of guiding principles for the Department's management of its National Laboratories. The goal of these principles is to sustain the laboratories' intellectual excellence well into the 21st century. In order to define the principles, the Task Force has been asked to focus their initial efforts on defining an overall strategic vision for the laboratories (both multi-program and single-purpose) within the context of national security policy and the National Energy Strategy. Special emphasis should be given to national defense, economic competitiveness, energy security, scientific and technological education, and environmental protection.

This strategic version will provide the context for defining strategic planning guidance. This guidance will help the Department define the laboratories' roles and missions, proposed management principles, and provide a roadmap for implementation.

Due to DOE's close working relationship with the Department of Defense (DOD) the Secretary of Energy wants to ensure that the SEAB Task Force is tightly coupled with ongoing efforts to strengthen the management of the DOD laboratories. Therefore, the Task Force represents a cross section of experts familiar with the national laboratories, DOD laboratories, and the research community at large, including industry and universities. To get this representation several non-SEAB members were invited to serve on the Task Force. The membership is as follows:

Dr. Edward A. Frieman (Chairman), Director, Scripps Institute of Oceanography
Dr. Lew Allen, Jr., Director, Jet Propulsion Laboratory
Dr. Leon M. Lederman, Director Emeritus, Fermi National Accelerator Laboratory
Dr. Michael M. May, Director Emeritus, Lawrence Livermore National Laboratory
Dr. John P. McTague, Vice President, Technical Affairs, Ford Motor Company
Dr. W.R. Brinkman (non-SEAB member), Executive Director, Research-Physics Division, AT&T Bell Laboratories
Dr. Timothy P. Coffey (non-SEAB member), Director of Research, Naval Research Laboratory
Dr. John S. Foster, Jr. (non-SEAB member), TRW Inc.

The objectives set forth for the Task Force are as follows:

Drawing upon national security policy and the National Energy Strategy, the Task Force should provide a vision of the likely future energy, economic, environmental, and national defense environment in which the Department and the laboratories will operate. Based on the vision of the future, a strategic vision for the national laboratories should be developed that harnesses their individual and collective talents to solve the Nation's future energy and scientific and' technological challenges. This strategic vision should provide the context for defining new programs, roles, and missions for the laboratories and the management principles and process needed by the Department to guide them over the next 20 years.

The Task Force should then examine in more detail the overall status of R&D support by DOE, identifying major forces shaping the Nation's R&D agenda and DOE's evolving role in carrying out that agenda. This exercise should attempt to situate the Department's research programs at the laboratories in the context of its overall programs, including university research, industrial R&D, and collaborative R&D. The study should also thoroughly consider the evolving relationships among universities, industry, and the national laboratories.

Finally, the study should define strategic planning guidance for the national laboratories that addresses the management practices and defines a process to achieve the vision of a vibrant national laboratory system into the 21st century. In developing the guidance, the Task Force should consider the research review process, role for work for others, and management of new initiatives.

NATIONAL LABORATORIES

Senator DOMENICI. I want to say this also. You wonder about the quality of the scientists, and I think it's everybody's desire that they be as good as we can possibly recruit. We want them to do their primary mission right.

I would suggest two things to you. It's very, very difficult.

One, when you are continuing to reduce size and they don't quite understand why and what's going on, there is a debilitating aspect to that that is gigantic.

Second, when I first came here years ago, I didn't understand it, but I think I do much better now, and that is to get the very best, you have to let them use their expertise from time to time in matters that are not directly related to the mission, or it's not as exciting a life and you don't get as competent a scientist.

Now that is not to say that we need any diversion of money. But people think they are diverting into other things now and didn't when they were the premier laboratories and charged with this great mission.

But let me tell you this. When Dr. Agnew was head of Los Alamos—and I say this to you, Mr. Claytor—they had about 8 percent to 10 percent of administrative costs that could go into diversified activities. People didn't get very upset about it. They just thought isn't that great. They're great scientists and they ought to be doing this.

Now, we are down to 4 percent or 5 percent and everybody is investigating them. Sooner or later, they have to know what they are supposed to do and what is legal and what is not. But you don't need to put on more hamstrings. You have to set the area of diversity and give somebody the credit for taking the appropriate risks. This is a devastating part of it, to be investigated all the time.

In fact, in this room I called it being Dingellized. [Laughter.]

John is my great buddy. But that's what happens. It's almost a psychotic reaction out there, not just psychological. They almost go crazy.

LABORATORY DIRECTED RESEARCH AND DEVELOPMENT

Mr. CLAYTOR. Senator, let me respond to that.

I had the honor of hearing you testify before Mr. Synar. Later, I was on the witness stand and got beat up pretty badly.

We have a new policy, which is I think not overly restrictive, but will recognize up to 6 percent. We will need to examine it, but not to sit in judgment on every detail, but examine how it is being applied. The Secretary of Energy will have to give an OK to the percent number. Then the laboratory directors will have leeway to operate within that.

I think we will have a system that should satisfy the critics but that will allow this kind of discretionary funding. I agree with you that this is important to developing good ideas.

Senator **DOMENICI**. Well, let me suggest this. I don't know that it's final and maybe the Democratic and Republican staffers who at least stay in touch with the House may correct me. But I think the House subcommittee is moving in exactly the opposite direction and use as the justification the Synar hearing. They are about to take away the 6 percent and say, "No diversification."

Frankly, I hear that it is this year. We had thought we had gotten rid of it by saying leave it in and you all will make the recommendations you did. You've just described them, with your parameters, so that you won't get swings that are too big. And now I understand, using Synar, which is very old activity, as you know—they are random and some are 4 years old—they are saying let's take out that 6 percent now and put them back to ground zero.

If that is the case, we very much would appreciate somebody in the administration telling them that they are not frightened about the Synar list.

I gather in the responses here that you would be concerned about a dramatic restraint on the flexibility and the 6 percent that you have gone along with and recommended guidelines for.

Would you state for the record whether that would have a negative effect on the laboratory or not, in your opinion, overall, and long-term? We want that for the record.

Mr. **CLAYTOR**. The 6 percent is a maximum. We're not going to go over 6 percent. So I am not suggesting to you that we would agree that 6 percent is necessarily the number.

Senator **DOMENICI**. Up to 6 percent.

Mr. **CLAYTOR**. Up to 6 percent; yes.

We do feel that discretionary funding is very important to the development of new ideas. It needs to be controlled and examined in a philosophical sense, which we will do with the laboratory directors and their people. We will ask the Secretary to approve that.

But we do believe it is important to have discretionary funding in the laboratory. I would say that for the record.

[The information follows:]

ADDITIONAL INFORMATION ON LABORATORY DIRECTED R&D

The Laboratory Directed Research and Development (LDRD) program is a method to permit the laboratories to pursue new directions of research not currently funded by their mainline programs in a cost efficient and effective manner. These funds, which are only a small portion of their overall program, are used for investigating new scientific opportunities on the forefront of science and technology that could not be justified otherwise because of the directed nature of their mainline funding. The National Laboratories have highly trained, competent staff and management. They are in a strong position to determine those innovative science and technology programs that have the greatest potential to benefit national security and the scientific and economic vitality of the nation. Besides this, it is in their own best interests to pick only those proposed projects that have the highest potential for payoff for the weapons program and the nation.

The LDRD program is an important part of the mission of the National Laboratories and plays a vital role in maintaining and upgrading our nuclear deterrent and national security. Just as the existing nuclear weapon stockpile and current weapon production is based on past research and development (R&D), LDRD provides part of today's R&D base which will ensure the future vitality of the DOE weapons program. The need to continually expand and improve the nation's science and technology base was demonstrated dramatically by the recent successful applications of technology in Operation Desert Storm. In addition, our ability to respond to the increased Environmental, Safety and Health requirements and to improve the safety of nuclear weapons as recommended in the Drell Report is only possible as a result of past research and technology development projects.

LDRD (and its predecessor Exploratory Research and Development, ER&D) had substantial success in contributing to the technology base of the Defense Programs and the nation. A long list of examples can be provided. In addition, it should be noted that many of the LDRD projects at the three DOE weapons design laboratories have resulted in a large number of R&D 100 awards, more than any other agency or company, public or private. These awards are given by private industry for those developments which they believe are of greatest significance to the future of the United States industry.

If we reduce the efforts focused on long range development, we increase the risk of missing innovative solutions to our national defense problems and potentially devaluing our deterrent as a result of new technological breakthroughs. The actual costs are very small in the context of national defense. The benefit of long-range research has been demonstrated over the years by the Laboratories' ability to respond to new nuclear weapon system requirements in terms of mission, increased safety, reliability, enhanced command and control, improved manufacturability, etc. We must not lose sight of the critical need to maintain and improve our scientific and technological capabilities.

External reviews have generally given high marks to the value of the long-range discretionary research at the laboratories. The Office of Science and Technology Policy study in 1983 and the Energy Research Advisory Board report in 1985 both recommended an increase in laboratory-directed research because of the need to maintain scientific and technological vitality at the laboratories and because of the potential payoff. Essentially, all of the new technology going into today's nuclear weapons systems to make them safer, more flexible, and more reliable has resulted from the long range research efforts of previous years.

PREPARED STATEMENTS

Senator DOMENICI. The following statements were submitted for inclusion in the record by Rear Adm. J.M. Barr, Deputy Assistant Secretary for Military Applications; Steven D. Richardson, Deputy Assistant Secretary for Nuclear Materials; Victor Stello, Deputy Assistant Secretary for Facilities; Victor Alessi, Director, Office of Arms Control; William Barker, Acting Director, Office of Security Affairs; and Robert W. Daniels, Jr., Director, Office of Intelligence.

[The statements follow:]

STATEMENT OF REAR ADM. J.M. BARR

Mr. Chairman, members of the committee, I am pleased to appear before you to testify in support of the Department of Energy's (DOE) Atomic Energy Defense Activities budget request for FY 1992.

MISSION OF THE NUCLEAR WEAPONS PROGRAM

The mission of the DOE nuclear weapons program is to support United States (U.S.) national security policy. A key element of this policy is our nuclear deterrent. In order to assure safe and credible options for the nuclear deterrent, we conduct research, development, and testing for military applications, and we produce, maintain, and retire nuclear weapons. In order to execute our mission we must maintain and operate the U.S. Nuclear Weapons Complex in a safe, environmentally acceptable manner.

Today our challenge is to find ways to accomplish our mission in a world that is undergoing fundamental changes. One of the most significant changes, in our view, is the rapidly changing perception of the threats to national security and what is required to counter those threats. Equally significant to the weapons program are the changes we face as we continue to implement Secretary Watkins' new culture. In this new culture there must be compatibility between our mission to develop and produce nuclear weapons and protecting the environment; there must be a dedication to excellence in all our endeavors; and we must welcome constructive criticism about all levels of our operation. The weapons program must respond to these and numerous other changes with a significantly constrained budget. A "business as usual" approach will no longer suffice. We must find better ways to do our job if we are to carry out successfully our mission in this new world.

The FY 1992 budget request I will be discussing with you today reflects our efforts to redirect the nuclear weapons program in response to these changing tides. I would like to focus today on five principal subject areas: 1) factors influencing the

FY 1992 budget request; 2) assets available to accomplish the program; 3) program concerns; 4) program accomplishments; and 5) the FY 1992 budget request.

FACTORS INFLUENCING THE FISCAL YEAR 1992 BUDGET REQUEST

As you know, changes in the international arena are causing the U.S. to reevaluate its defense posture, including the nuclear weapons stockpile requirements. Based on a recently completed Joint Chiefs of Staff review, requirements for production of new nuclear weapons have been significantly reduced. However, the requirement for a nuclear deterrent to ensure our national security will continue and with it the need for a complex to maintain stockpile reliability, improve nuclear weapon safety, and respond to all the other elements of our mission. It is imperative that we support the Nuclear Weapons Complex as efficiently and economically as possible, and retain the necessary scientific and technical expertise.

Nuclear weapon safety continues to receive increased attention. While we have always designed weapons that incorporate the highest degree of safety that technology would allow, we must continue to improve the stockpile as new safety-related technologies mature and standards change.

Establishing the Secretary's new culture continues to be a significant factor in our operations. We are committed to implementing a philosophy in which the safety, environment, and health of the DOE employees and the public are given the highest priority. We will continue to strive to meet legal requirements in the environment, safety and health (ES&H) arena. So far, the biggest impact of the new culture has been funding the necessary ES&H upgrades for existing old facilities to bring them up to modern standards. This effort continues to command a significant portion of the nuclear weapons program budget.

The continuing, albeit smaller, stockpile requirements, ES&H demands, and aging facilities have lead to our proposal to reconfigure the Nuclear Weapons Complex. The reconfiguration plan we have developed envisions a complex that is safer, environmentally compliant, less diverse, smaller, and less expensive to operate than the current complex. It would include some modern, efficient research and production facilities, and would better utilize both new and current facilities. Consolidations would be made where possible. Reconfiguration is a long-term effort. We have initiated the process of preparing a programmatic environmental impact statement (PEIS) on reconfiguration. The PEIS will examine implications of alternative means to accomplish reconfiguration of the Complex. A band of reasonable alternatives will be considered. After the final PEIS is issued a record of decision will be prepared for the Secretary to set forth the configuration for the future Nuclear Weapons Complex.

Deficit reduction considerations also present difficult choices that the weapons program must face. Limited funding has resulted in more difficult choices among competing program requirements, new culture requirements, and capital asset requirements. We are faced with balancing the constraints of increased ES&H costs, reduced production capability, diminished nuclear competence (because of loss of skilled scientists, engineers, testing and production personnel), and fewer underground nuclear tests at the Nevada Test Site against the requirement to continue producing nuclear weapons. At some sites, we are close to losing the technical capability and skills required to operate some manufacturing processes. The same concerns exist in some research and development areas.

The FY 1992 budget request has been formulated to accomplish as many programmatic requirements as possible, recognizing these factors and constraints. We believe that we will be able to support the Nuclear Weapons Stockpile Memorandum with the resources requested.

WEAPONS PROGRAM ASSETS

Nuclear weapons program activities are the largest single component of the DOE's budget. This essential national security program represents less than 4 percent of the Nation's overall spending for defense. The Nuclear Weapons complex is a unique national investment which has evolved over the past 40 years, but has not been adequately maintained.

WEAPONS PROGRAM FACILITIES

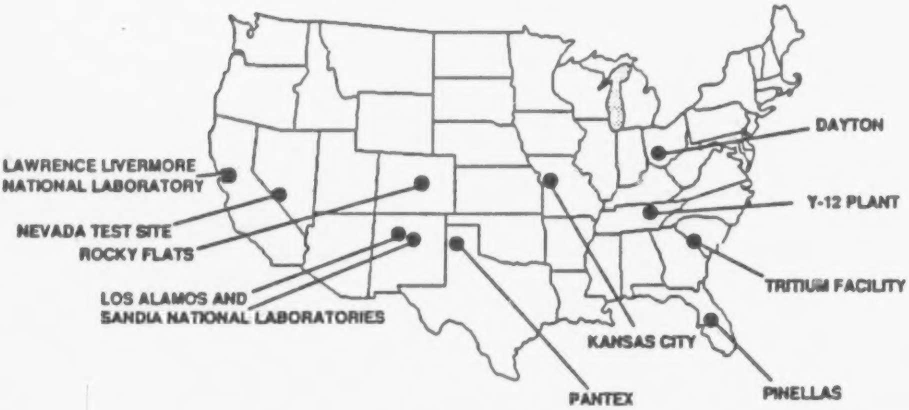


CHART 1

(CHART 1) The Nuclear Weapons Complex of today is a combination of highly experienced and qualified scientists, engineers, and technicians coupled with specialized equipment and facilities. Together, they comprise the DOE technology and production base which has been assembled to maintain a research, development, and testing capability and provide manufacturing capability to meet Presidentially directed stockpile requirements.

RESEARCH, DEVELOPMENT AND TESTING

The Weapons Research, Development and Testing (RD&T) program plays an essential role in maintaining the credibility of the U.S. nuclear deterrent. Particularly in this time of change, which includes rapidly evolving weapons technology worldwide, the RD&T program will be even more important in maintaining national security.

The RD&T program is accomplished by our three Defense Programs (DP) National Laboratories. Activities associated with designing current and advanced future nuclear explosives are carried out by the Los Alamos National Laboratory (LANL) and the Lawrence Livermore National Laboratory (LLNL). Sandia National Laboratories (SNL) integrates the nuclear explosive with other subsystems it designs, in order to provide functional nuclear weapons for the Department of Defense (DOD) delivery systems.

Underground nuclear testing, which is integral to weapons research and development (R&D) and demonstrating weapon system performance, is carried out at the Nevada Test Site.

Along with unique "cradle to grave" responsibilities for the weapons in the stockpile, the RD&T technology base is vital to support the stockpile as it continues to evolve in response to external forces. As arms control negotiations continue, with the possibility of reducing the numbers of current nuclear weapons, it is likely that the force structure will be reconfigured in fundamental ways. Reduced numbers of current nuclear weapons and emerging nuclear and nonnuclear technologies will place an even greater premium on the reliability, survivability, and safety of our forces. It is imperative that we have the highest confidence in the nuclear weapon systems that remain. We must look to the RD&T technology program to modify current systems or develop new ones to meet changing mission requirements.

The threat assessment capability of the RD&T Complex remains an important undertaking. It is vital that we not be surprised technologically and that we remain prepared to respond to new threats that arise. The RD&T program ensures against technological surprise by timely identification and understanding of potential threats to the national security.

WEAPONS PRODUCTION

The nuclear weapons program encompasses production and maintenance of all U.S. nuclear weapons in the stockpile. The Nation's nuclear weapons production complex is comprised of seven government-owned, contractor-operated production facilities. These facilities are the Pantex Plant, the Rocky Flats Plant, the Y-12 Plant, the Savannah River Tritium Facility, the Kansas City Plant, the Mound Plant, and the Pinellas Plant. As with the RD&T technology base, many of the capabilities in these plants cannot be provided by the private sector. The plants and laboratories are integrated into a nationwide production system. The components and finished products are moved between sites in a safe, secure transportation system for assembly and testing.

CONCERNS

The resumption of plutonium operations at Rocky Flats continues to be a major concern this year as it was last. We have made progress but the process of identifying the underlying causes and making changes to correct or eliminate them has proved to be more difficult, time consuming, and expensive than originally estimated. For example, efforts to produce adequate operating procedures failed several times before the basic management and technical infrastructure needed to develop such procedures could be adequately upgraded. This lack of infrastructure affected nearly every aspect of operation at Rocky Flats.

During FY 1990 and the early part of FY 1991 the Department and EG&G have made significant progress in developing the needed capabilities at Rocky Flats and in accomplishing the safety improvements, such as removal of plutonium from glovebox exhaust systems needed before resumption of plutonium processing. We now project that operations will begin in Building 559, a laboratory facility, during the summer of 1991. Building 707, the main production facility, probably will resume operations during the fall of 1991. The four remaining buildings would resume operations in a phased manner which would stretch out into early calendar year 1993. Successful execution of this plan will permit the Department to meet our projected mission requirements.

Although we believe that currently identified resumption issues can be resolved in accordance with the above timetable, a firm projection of when plutonium operations might resume at the Rocky Flats Plant cannot be made due to uncertainties in 1) the outcome of expected legal challenges; 2) new issues raised by government regulatory and oversight agencies; and 3) unforeseen technical issues.

Another major concern we have is the slow but constant erosion of our skilled scientists and engineers in weapons design laboratories and test sites. Since 1987, research, development, and testing funded employment at the laboratories has declined about 30 percent, a reduction of about 3,000 full-time equivalents (FTEs). This erosion has resulted primarily from budget constraints and changing priorities which have lead to declining financial support for nuclear weapons research, development, and testing activities. Continued loss of these skilled personnel will eventually result in key weapons capabilities being lost and important initiatives not being addressed or adequately supported. Continued erosion may ultimately prevent the DOE from fulfilling all its defense missions. We are attempting to address this problem, to the extent possible, through stabilization of funding levels.

PROGRAM ACCOMPLISHMENTS

The weapons program has taken several steps to meet the new challenges presented by the international situation, the Secretary's new culture, deficit reduction actions, and other requirements and constraints. I would like to describe a few of our noteworthy accomplishments.

WEAPONS SURETY

The new emphasis on surety is paramount in all aspects of the weapons program. The Secretary has been active in addressing issues brought to the forefront in the annual report to the President on weapons surety. He has actively engaged in regular surety discussions with the three directors of the DOE national laboratories. A new, dedicated Nuclear Weapons Council/Weapons Safety Committee (NWC/WSC) has been jointly formed by the DOE and the DOD, chaired by DOE, to specifically address nuclear weapons safety matters. The DOE is working diligently with the DOE through the NWC to respond positively and constructively to the special House Armed Services Committee's special scientific committee, the Drell Panel, in its investigation of weapons system safety. Recommendations by the Drell Panel are currently being addressed by the NWC.

A DOE Surety Plan to enhance safety, use control, and security of weapons in the nuclear weapon stockpile is being developed. Three major objectives have been identified. The first objective of the DOE surety program is to review the adequacy of surety responsibilities, directives, requirements, design criteria, and assessment methodologies. The second objective is to ensure that, with research and development support, current warhead production and Stockpile Improvement Programs (SIPs) for existing warheads strongly emphasize nuclear detonation safety, plutonium dispersal safety, and use control and security capabilities. The third objective, which also requires research and development support, is developing and achieving design architectures which provide intrinsic safety as well as enhanced use control and security required to fulfill the surety mission.

We intend to build on several successful risk assessment studies by coordinating other studies to understand the value of operational enhancements, to assess needs and priorities for surety SIPs, and to help establish R&D priorities.

We are also completing a joint study on the safety and security of nuclear weapons transportation. Additionally, several new DOE orders for nuclear weapons safety have been promulgated which incorporate a plutonium dispersal safety standard and establish a risk assessment-based nuclear explosive safety program.

It should be noted that improving stockpile surety by continued fabrication of new warheads and SIPs that add the best technology available requires a healthy DOE production complex which complies with all current and planned ES&H regulations and requirements.

SUPPORT OF THE SECRETARY'S TEN-POINT INITIATIVE

Changes have been made within the weapons program to move toward full accountability in the areas of ES&H. We have: (1) modified award fee contracts for all nuclear weapons production facilities to base not less than 51 percent of the award fee on environmental, safety, and health compliance activities; (2) completed comprehensive negotiations with a number of States that host DOE nuclear facilities to provide them with direct access to DOE facilities and support State oversight of DOE environmental monitoring programs; (3) improved coordination with the Occupational Safety and Health Administration (OSHA), which has provided DOE with assistance on three Tiger Teams Assessments, conducted extensive training of DOE staff, and carried out an evaluation of DOE's occupational safety and health program; (4) strengthened technical capabilities of line management and oversight personnel and established initiatives which significantly strengthen technical oversight, conduct of operations and maintenance, technical training and reporting of critical occurrences throughout the Weapons Complex; (5) completed nine Tiger Team environmental compliance assessments and corrective action plans at weapons program sites (spending $162.2 million in FY 1991), and (6) improved our implementation, and compliance with the National Environmental Policy Act (NEPA) processing in excess of 150 NEPA documents including environmental impact statements and environmental assessments.

ENVIRONMENT, SAFETY AND HEALTH

Substantial efforts were expended last year to: update facility safety documentation such as safety analysis reports and technical specifications; develop new nuclear facility operating procedures; develop and implement new training programs; and improve environmental monitoring and develop new controls to assure environmental emissions are in compliance with standards.

An internal DOE agreement between the Assistant Secretary for Defense Programs and the Director of the Office of Waste and Environmental Restoration and Waste Management (EM) has been signed on waste minimization activities. This agreement provides for joint DP and EM management and funding of shared research, development, demonstration, and feasibility studies. It also provides for joint management and funding of the implementation of changes in materials utilization and processes to reduce the generation of waste or eliminate selected waste from our facilities.

Aggressive programs in waste minimization have been initiated at the Kansas City, Savannah River, Pinellas, and Rocky Flats Plants as well as at the weapons national laboratories. In addition, the Pinellas Plant and our three weapons laboratories have reorganized to devote more management attention to ES&H activities.

WEAPONS RESEARCH ACTIVITIES

The weapons research and technology development activities are directed toward maintaining and advancing the nuclear weapon and defense critical technologies. Current program elements include nuclear and nonnuclear materials, weapon physics, weapon design and computational modeling, and integrated weapon systems and electronics. Substantial efforts are specifically focused on improved weapon safety, enhanced command and control, economical and environmentally sound manufacturing, stockpile reuse, and nuclear weapons designs that minimize reliance on underground nuclear testing.

Recent accomplishments directed toward providing intrinsic weapon safety and enhanced security include: an assessment of high temperature behavior of insensitive high explosive (IHE) which indicates that current nuclear storage limit rules are adequate; [deleted] development of a new permissive action link recode philosophy and hardware for U.S. Air Force and theater forces; and an application of probabilistic risk assessment to weapons surety.

Accomplishments in weapon physics, design, and computational modeling include progress in predicting the yield of nuclear weapons; development of a new low-yield nuclear source for weapons effects and physics studies and development of a nonnuclear experimental technique to determine performance characteristics of nuclear weapons.

Additional success in providing the scientific and technological foundation to maintain nuclear deterrence includes pioneering work in automatic programming for robotics in manufacturing; development of a massively parallel computing center and demonstration that massively parallel computers can be substantially faster and more powerful than today's supercomputers; development of a miniature synthetic aperture radar and automatic target detection system; development and application of dynamic response models for earth and concrete-penetrating projectiles that form the foundation for lethality assessments; and development of a comprehensive simulation code for chemical vapor deposition which is used in electronic fabrication and has led to several cooperative interactions with industry on equipment design and process control.

INTERLABORATORY RESEARCH AND TECHNOLOGY DEVELOPMENT PLANNING GROUPS

We are in the process of developing and establishing interlaboratory planning groups to ensure more efficient use of our science and technology resources including personnel, funds, and facilities. The purpose of these groups is to develop well-coordinated program plans which address research and development in weapon chemistry, materials, weapons physics, weapon design and computation, and in integrated weapon design and electronics. These plans will provide a roadmap for reaching advanced weapon surety deliverables and any advanced technical and mission requirements placed on us in the future. A coordinated approach to weapons research program planning will help eliminate any inefficiencies that may currently exist and will enhance communication among key scientists across all the laboratories and sites. It will give laboratory managers a broader interlaboratory view of technical management options and capabilities across all three laboratories. We expect to have several prototype groups operating by FY 1992 and to be in full operation for all applicable programs by FY 1993.

LABORATORY DIRECTED RESEARCH AND DEVELOPMENT

Last year the DOE was directed by Congress to improve oversight and accountability for laboratory directed research and development (LDRD). We are in the process of implementing new procedures for the control of LDRD, including a 6 percent allocation ceiling. These procedures are codified in DOE Order 5000.4, adopted by the Department on February 28, 1991. In brief, the procedures require the laboratories to describe their LDRD program, projects, funding requirements, justification, and location prior to undertaking any such effort. Upon Secretarial approval, the Assistant Secretary for Defense Programs gives written authorization to expend a given level of funds.

THREAT ASSESSMENT

We are continuing our research in assessing the threat that advanced concepts would pose if employed by an adversary against our strategic deterrent forces. [Deleted.]

INERTIAL FUSION

During 1990 the National Academy of Sciences (NAS) conducted a review of Inertial Fusion (IF). This review concluded in part that there is a reasonable chance that laboratory ignition (i.e., fusion) and gain could be achieved with a major upgrade of the NOVA laser at the Lawrence Livermore National Laboratory. Their conclusion was based on successful laboratory experiments, the Halite Centurion program of underground nuclear tests, and improved theoretical understanding and modeling of IF physics.

The IF program has initiated activities toward a new 5-year program plan to reflect the recommendations of the NAS and the Fusion Policy Advisory Committee.

Thus far, in FY 1991, we have begun the Precision NOVA laser project, initiated in FY 1990, and the OMEGA laser upgrade projects. Moreover, as recommended by the NAS, we have accelerated the NIKE krypton fluoride laser development at the Naval Research Laboratory.

The classification review of the IF program, directed by the Secretary, is underway and the first phase was completed during March 1991. The goal is to eliminate unnecessary restrictions on information relevant to the energy applications of IF in order to foster U.S. participation in international research on inertial fusion as an energy source.

DEFENSE CRITICAL TECHNOLOGIES PLAN (DCTP) REPORT

Headquarters and our three weapons laboratories have been participating with the DOD in the development of the DCTP Report which will be submitted to Congress in May 1991. For the technologies identified by the DOD as critical to its future war fighting capability, the DOE's contribution reflects its present capabilities with respect to DOE technology/DOD mission applications that are synergistic. This synergism is primarily in technologies where the DOE laboratories are in the forefront because of nuclear weapons program requirements. In addition to participating in the development of the overall DOD report, we are developing the Nuclear Weapons Critical Technologies Annex to the report. The annex will be available at about the same time as the DCTP report.

ABOVEGROUND EXPERIMENTS (AGEX) STUDY

The goal of the overall AGEX Study, which is being conducted in phases, is to provide an innovative approach to laboratory experiments for optimizing physics data obtained in underground nuclear tests, thereby maximizing the value of data from each test. This phase is being conducted by seven working groups composed of weapons experts from distinct weapons physics disciplines. It will provide a comprehensive set of scientific and technical requirements which, if met, would enable the weapons laboratories' experimental facilities to improve markedly laboratory capability to obtain and maximize the usefulness of nuclear weapons physics data. The report is due in July 1991.

EMERGENCY PREPAREDNESS

In FY 1990 we established for the first time a single manager for all the DOE's major radiological emergency response assets and capabilities in DP. This action will result in a more efficient, less costly, single response program. We also provided contingency planning and onsite/offsite emergency preparedness and response capabilities in support of the Galileo and Ulysses space launches.

TESTING

[Chart deleted.]

CHART 2

(CHART 2) Over the last several years, there has been a significant decline in the number of nuclear tests. [Deleted.] In spite of a significant increase in data returned from nuclear tests by the use of advanced testing techniques and diagnostic instrumentation, this low testing rate prevents the DOE from addressing all of its national security responsibilities in a satisfactory manner.

[Deleted.] Some other experiments were conducted as "add-ons" to the basic test objective.

[Deleted.]

TEST BAN READINESS PROGRAM

DOE refers to this effort as the preparation for further limitations on nuclear testing. Section 1436 of the National Defense Authorization Act of FY 1989 requires that we report annually on our ability to maintain the reliability, safety, and continued deterrent effect of the stockpile in the event that a low threshold or comprehensive ban on nuclear explosive testing is negotiated and ratified. This report will be submitted in May 1991. It updates progress made in 1990 and reports on open issues from the 1989 report. Although progress has been made during the past year in all areas, understanding is still inadequate to support devising a program that can assure continued stockpile reliability in the event of further limitations on nuclear testing. A review of this year's activities does not reveal any specific technical breakthroughs that would permit early attainment of the objectives of Section 1436.

At the current budget level, the plan for research activities dealing with the Test Ban Readiness Program is significantly reduced compared to the FY 1990 program. Under the projected "budget constrained" program, progress toward the goal of determining the impact of further test limitations will be slowed. It should be noted that progress in this regard is predicated on the ability to test at yields up to the 150 kt Threshold Test Ban Treaty limit.

REMANUFACTURING STUDY

Section 3131 of the FY 1991 National Defense Authorization Act required submission of a remanufacturing study. Remanufacture is the replication of existing warheads. The Remanufacturing Study was submitted to Congress in April 1991. The report covered: whether remanufacturing nuclear weapons using existing designs could be accomplished; whether significant production engineering and/or development engineering would be required; the need for upgrading to meet all current safety design standards; if there are instances where remanufacturing by replication of existing designs would be appropriate; and the need for nuclear testing after remanufacture in order to certify weapon performance. It concluded that remanufacturing would not be a cost effective means to provide safe, secure, reliable weapons for the Nation's nuclear stockpile.

NEVADA TEST SITE IMPROVEMENTS

As a result of the declining resources, last year the Nevada Operations Office and the weapon laboratories jointly initiated an intensive review of operations at the Nevada Test Site directed toward achieving greater operational and procedural efficiencies. Two principal study teams have been established: the Test Operations Review Team (TORT) and the Support Operations Review Team (SORT). The TORT is concentrating on activities directly related to test execution while the SORT is concentrating on common and support operations. These teams have been supported by a large number of subgroups with members from the operations office, the laboratories, and the management and operating contractors. The extremely cooperative and enthusiastic effort of all the participants has been highly beneficial and productive. The review teams' efforts are nearly complete, and some changes are already being implemented. One example is the adoption of a 10-hour, 4-day work week for many of the people who work at Mercury with estimated savings of $400-750 thousand per year which will be achieved by reducing bussing and feeding costs. Another is the adoption of a single method for shock mounting the trailers used in tests events. After an initial expenditure of $600 thousand in capital funds, we expect a savings of more than $300 thousand a year with a significant improvement in operational efficiencies.

One of the largest areas for cost reduction indicated by the review will be achieved by the consolidation of the construction camps. With some modification to expand the capacity of the Los Alamos construction facility that is currently being relocated, a cost savings of more than $2.5 million per year is projected after an initial cost of $2 to $5 million to cover the required expansion. Virtually all the areas selected for review appear to offer potential opportunities for cost avoidance. A quantification of the projection of increased efficiencies will be prepared after a thorough review by the Nevada Test Site Planning Board of the TORT and SORT reports is completed later this year.

WEAPONS PRODUCTION AND SURVEILLANCE

[Deleted.] These rebuilds allowed for stockpile modernization as well as savings in production cost. During the year, we continued production of the B61 family of bombs, the W88/Mk5/Trident II warhead, and completed production of the W80–1/

Air-Launched Cruise Missile (ALCM). In addition, we provided warheads for [deleted] Trident II/D5 missiles.

Phase 3, Development Engineering, continued on the B90 Nuclear Depth/Strike Bomb (ND/SB) and was initiated on the W61 Strategic Earth Penetrator and the W91 SRAM–T. The W89 SRAM II warhead progressed into Phase 4, Preproduction. These new weapons will provide significant safety and operational effectiveness enhancements to the Air Force and Navy and will provide a significant part of our national security and nuclear deterrent well into the next century.

At the direction of the President, development of the warhead for the Follow-on-to-Lance Missile and the W82 155mm Artillery-Fired Atomic Projectile (AFAP) was terminated during FY 1990.

While remaining committed to producing new weapons, our continued investment in stockpile safety and reliability is absolutely essential. During FY 1990, we completed 201 retrofits and conversions to provide modernization improvements to the stockpile. This included a retrofit which significantly improved the reliability of the W87 (Peacekeeper).

[Deleted.] In addition, we exchanged limited life components on almost all the systems in the stockpile. Other ongoing stockpile evaluation activities include product acceptance, new material and stockpile laboratory tests, new material and stockpile flight tests, and surveillance of the various warheads in the stockpile. As part of this program, 254 new production and stockpiled warheads were evaluated.

During the past year significant accomplishments have been made in production operations as well as improvements in the conduct of operations, as illustrated by the following examples:

Implementation of a continuous flow manufacturing process for piece parts at both the Kansas City and Pinellas Plants has resulted in significant savings at both sites. For example, at Kansas City, production cycle time for one department was reduced from 21 days to 2 days, in another department from 8 days to 1 day, and in another from 260 days to 71 days. At Pinellas, the continuous flow manufacturing processes saved an estimated $700,000 in FY 1990.

We completed the Fragment and Debris Hazard Evaluation Project at Pantex. The culmination of over 2 years of research and testing, this study will result in significant cost savings in the siting and operation of high explosives processing facilities. This project developed new distance criteria for the small explosive weights used in the DOE operations. Previously the safe siting distance of adjacent inhabited buildings required use of unrealistically large DOD default values for much larger explosive amounts than those actually used at Pantex. Since the DOD Explosive Safety Board accepted the newly developed criteria, the DOE is now able to demonstrate compliance with the DOD explosive safety requirements without resorting to special administrative exemptions, costly additional construction, or expensive off-shift operations. Near-term benefits, in addition to the advantages of demonstrated compliance with safety criteria, include an estimated $2.3 million savings in reduced construction costs derived from the elimination of unnecessarily massive design requirements. Also eliminated is the recurring requirement for expensive off-shift operations in production facilities which previously could not be operated while adjacent buildings were occupied.

At the Mound Plant a new Supplier Recognition Program has been instituted with awards to suppliers in such categories as Construction/Architecture and Engineering, Weapons Components and Services. Benefits being received are improved deliveries against schedule, improved quality with fewer rejects, and closer relationships with suppliers. This program to nurture quality vendors through close working relationships and recognition of superior performance while simultaneously decertifying unresponsive vendors is a positive method to improve productivity, product quality, and delivery performance. This commitment to total quality and teamwork is readily providing benefits.

Y–12 has implemented a program to reduce worker exposure to radiation and to provide for control of radioactive material contamination within the plant. Decontamination actions are well underway on production areas with highest potential radiological contamination. Boundary Control Stations are being located at entrances to all radiological areas where employees change shoes and protective clothing, wash hands, and conduct self-monitoring prior to exiting (Charts 3 and 4). In addition, we now store depleted uranium parts in aluminum containers instead of the open bins we used previously (CHART 5).

As a result of these and other actions, the annual radiation exposure for Y–12 employees dropped an average of almost 30 percent for skin exposure and for penetrating exposure from 1988 to 1989. Projections for 1990 indicate further larger drops.

We have made numerous significant accomplishments at Rocky Flats in order to resume plutonium operations there. These include: Installation of new operating and security contractors; preparation of a Resumption Management Plan; initiation of actions to remove plutonium from ventilation systems and to minimize future accumulations; a tripling of the Rocky Flats DOE office staff and completion of a Special Nuclear Material Inventory with full accountability in January 1991. Operations are proceeding rapidly.

As I mentioned last year, we will be using a supercompactor to reduce our volume of radioactive waste. We are now doing systems testing on that compactor (CHART 6). At the present time, full operation is scheduled for late June 1991.

In the production area the Automated Machining Cell was completed on schedule and $2.7 million under budget in FY 1990 (CHART 7). This state-of-the-art machine tool to be used in the W88 Trident II Program has fully automated work-in-process gaging and automated tool changing and parts handling. To date we have 97 percent acceptance on 20 measurable features.

DEFENSE PROGRAMS—WEAPONS ACTIVITIES—FY 1992 BUDGET REQUEST

[In millions of dollars]

	Fiscal year—		
	1990	1991	1992 request
Research and development	$1,218.8	$1,254.9	$1,262.6
Testing	553.3	482.2	501.4
Subtotal, research, development, and testing	1,772.1	1,737.1	1,764.0
Production and surveillance	2,468.9	2,509.4	2,548.5
Program direction	98.7	106.4	164.0
Total	4,339.7	4,352.9	4,476.5

CHART 8.—BUDGET SUMMARY

(CHART 8) The FY 1992 budget request is slightly less than $4.5 billion—and only a 2.8 percent increase over FY 1991. The budget request has been shaped by the realities of a declining resource base and changing priorities. The request anticipates a reduced nuclear weapons stockpile and lower attendant annual production levels in the future. Our assumptions regarding stockpile size and production levels are based upon current efforts to formulate the 1991-96 Nuclear Weapons Stockpile Memorandum.

Significant changes in the budget between 1991 and 1992 include: continuation of the decline in research, development and testing (RD&T) levels—laboratory FTEs are about 20 percent below FY 1990 levels and underground testing will be at its lowest since 1961; further RD&T on Nuclear Directed Energy Weapons (NDEW) concepts, and related efforts to hedge against a technological breakthrough by an adversary will be performed within the "core" program, and at reduced levels; and the Inertial Fusion (IF) program has been reconfigured in recognition of the NAS and the Department's Fusion Policy Advisory Committee recommendations regarding IF priorities.

In spite of the changing scene, the basic mission and role of the Weapons Activities Program remain unchanged. Program and activities in support of the program have been funded according to the following general priorities: compliance with ES&H requirements; compliance with the DOE requirements; meet program mission requirements; noncritical maintenance; and performance improvement.

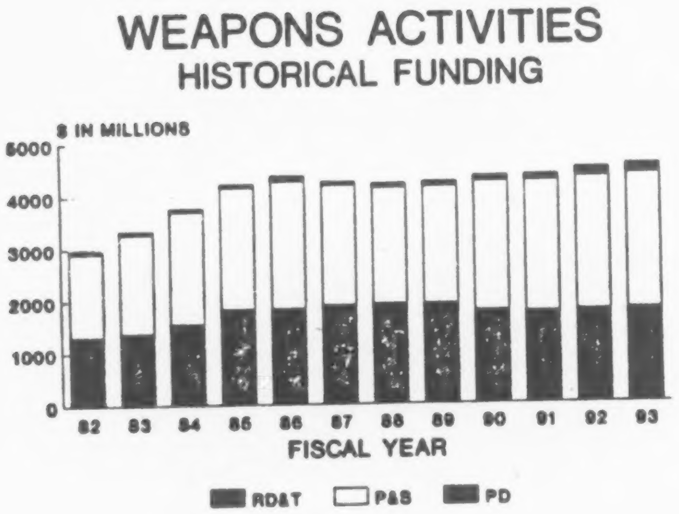


CHART 9.—BUDGET HISTOGRAM

(CHART 9) All elements of Weapons Activities have very modest increases, less than 2 percent, except for Program Direction. We are requesting an Increase of 54 percent in Program Direction to provide the resources necessary for the development of the Programmatic Environmental Impact Statement (PEIS) for the Defense Complex Reconfiguration. The PEIS is discussed later in my statement.

WEAPONS PRODUCTION AND SURVEILLANCE

The Weapons Production and Surveillance budget supports the fabrication and assembly of nuclear weapons and components, stockpile maintenance, and reliability assessment and safe, secure transport. The budget recognizes changing directions in national security which will move the Nation toward a smaller stockpile in the future with greater emphasis on weapon safety and security objectives. The weapons delivery levels reflected in this request are based on the latest discussions between the DOD and the DOE in formulation of the 1991–1996 Nuclear Weapons Stockpile Memorandum and are subject to endorsement by the President. Furthermore, these negotiations have been carried out within the framework of the DOE's priorities to place environment, safety and health improvements throughout the nuclear weapons complex as paramount near-term goals.

The FY 1992 request is based on the FY 1991 appropriation plus the recently approved FY 1991 supplemental of $283 million to allow Rocky Flats to continue the required activities to resume suspended plutonium production operations and make pit deliveries in early FY 1992.

The FY 1992 request is the minimum essential to address ES&H requirements and to maintain a viable nuclear weapons complex to meet national security objectives. It is focused on complying with ES&H regulations and requirements, implementing the DOE orders and instructions, maintaining the safety and viability of the fielded nuclear weapon stockpile, and supporting proposed the DOE production levels.

The budget request is structured into 14 functional programs for operating expenses which are grouped in six major categories: Weapons Production and Support; ES&H; Safeguards and Security; Utilities, Plant Engineering and Maintenance; Management and Administration; and Other. Capital funding for construction of specific weapons system production facilities, construction of ES&H, safeguards and security, and production support facilities and basic equipment and computers are identified as separate activities.

[Chart deleted.]

CHART 10

(CHART 10) The planned total new production and stockpile improvement program output scheduled for FY 1992 [deleted.] This reflects an 11 percent increase in production costs over 1991 based on the assumption that Rocky Flats will be producing pits. [Deleted.] The significant increase in the number of deliveries over FY

1991 is driven by the W88 Trident II; cost change is based on an increase in number of deliveries over FY 1991 and preproduction costs for the B90 ND/SB and the W89 SRAM II.

[Deleted.]

At present, we anticipate that plutonium component manufacturing operations might resume at the Rocky Flats facility during the fourth quarter of CY 1991. If this schedule is delayed significantly, we will be without an essential component for our weapons. In this regard, we will continue to study, and implement wherever needed, programs to reuse components from retired warheads. Initial studies indicate reuse to be a promising concept. I must emphasize, however, that there is no substitute for a plutonium processing facility to produce modern weapons which incorporate the full range of modern safety features.

WEAPONS PRODUCTION AND SURVEILLANCE (P&S) BUDGET REQUEST

[In millions of dollars]

	Fiscal year—		
	1990	1991	1992 request
Operating expenses	$2,059.9	$2,161.2	$2,273.6
Capital equipment	125.6	128.6	87.9
Construction	283.4	219.6	187.0
Total	2,468.9	2,509.4	2,548.5

CHART 11.—P&S BUDGET

(CHART 11) The FY 1992 budget request for Production and Surveillance is $2.549 billion, an increase of only $39 million or 1.6 percent over FY 1991. As compared to FY 1991, Operating Expenses increased by about 5 percent while Capital Equipment and Construction were reduced about 32 percent and 15 percent respectively. The decreases were essentially the result of budget constraints and the need to fund higher priority program activities.

WEAPONS PRODUCTION AND SURVEILLANCE TOTAL OPERATING EXPENSES

[In millions of dollars]

	Fiscal year—		
	1990	1991	1992 request
Weapons production and support	$862.4	$721.0	$768.2
Environment, safety, and health	194.0	297.0	312.6
Safeguards and security	132.4	158.3	167.5
Utilities, plant engineering, and maintenance	360.7	368.4	377.9
Management and administration	319.9	335.7	353.5
Other costs	190.5	280.8	293.9
Subtotal, P&S operating expenses	2,059.9	2,161.2	2,273.6

CHART 12.—P&S OPERATING EXPENSES

The 14 functional programs within the Operating Expenses category are summarized above.

(CHART 12) The Weapons Production and Support request is about $768 million. This represents an increase of 7 percent in costs over FY 1991 and provides for a [deleted] increase in the number of deliveries from FY 1991. It assumes Rocky Flats will resume operations on schedule. The budget request provides minimal funding for increased deliveries. Funding requirements are expected to be offset somewhat by complex-wide, infrastructure downsizing made possible by lower projected long-term production in the outyears. The ES&H request is about $312 million, an increase of about 5 percent over FY 1991. In the Environmental area, this funding satisfies currently identified site environmental base program requirements and requirements for refuse removal, sanitation, and waste minimization activities. In the Health area, it supports program improvements to satisfy compliance requirements, sustains radiological control upgrades and certain health vulnerabilities identified by Tiger Teams. These vulnerabilities include inadequate labeling and storage of toxic chemicals, improper storage of hazardous waste, and improper siting of meteorological and air pollution monitoring towers and equipment. In the Safety area, it provides for program growth to address criticality safety activities, fire upgrades, training and self-assessments.

The Safeguards and Security request is for $167.5 million, an increase of slightly less than 6 percent over FY 1991. It provides for activities to correct nuclear materiel control and accountability deficiencies, continue physical security activities, enhance computer security and security force training.

The Utilities, Plant Engineering and Maintenance request is about $378 million, about 2.5 percent over FY 1991 which supports a no-growth program. It provides for ongoing activities such as Occupational Safety and Health Administration/National Environmental Protection Act (OSHA/NEPA) documentation and other increased ES&H support engineering. It also supports normal utility operations and ongoing upgrades. It supports minimal essential requirements for maintenance of facilities and equipment. It provides funding for some increased activities but maintenance backlog will continue to grow as resources are applied to corrective actions reported by Tiger Teams and others.

The Management and Administration request is for $353.5 million, an increase of about 5 percent over FY 1991. This provides for minimum essential activities to support plant missions, responding to Tiger Team findings, and improvements in automated systems required for financial and ES&H activities.

The Other Costs which include Emergency Operations, Safe Secure Transportation and Federal Support request is for $294 million, an increase of 5 percent over FY 1991. Funding provides for: enhancing emergency operations, a primary departmental initiative; completion of program expansion of the safe, secure transportation system began in FY 1990; the DOE field office oversight of the management and operating contractor plant operations; and payment against Monsanto health insurance settlement.

WEAPONS PRODUCTION AND SURVEILLANCE CAPITAL EQUIPMENT—SUMMARY

[In millions of dollars]

	Fiscal year—		
	1990	1991	1992 request
Basic equipment	$113.1	$112.7	$75.2
P&S computers	12.5	15.9	12.7
Total	125.6	128.6	87.9

CHART 13.—P&S CAPITAL EQUIPMENT SUMMARY

(CHART 13) Capital Equipment for weapons production and surveillance is reduced about 32 percent compared to FY 1991. The request provides for ADP support and Basic Equipment. It provides the minimum level necessary to replace obsolete and failing equipment. Some $4.5 million is planned for two major items of equipment (MIEs), a Steel Investments Casting System and telephone switching gear. The large reduction from FY 1991 results from the need to fund higher priority requirements and overall reduced funding availability.

PRODUCTION AND SURVEILLANCE CONSTRUCTION SUMMARY

[In millions of dollars]

	Fiscal year—		
	1990	1992	1992 request
Programmatic construction:			
Weapons systems	$48.5	$23.6	$33.4
Facility capability assurance program	94.2	106.8	47.5
Production support facilities	76.3	13.8	12.9
General plant projects	26.9	36.4	34.7
Total programmatic construction	245.9	180.6	128.5
Environment, safety and health	32.1	19.7	25.0
Safeguards and security	5.4	19.3	33.5
Total P&S construction	283.4	219.6	187.0

CHART 14.—P&S CONSTRUCTION

(CHART 14) The request for construction totals $187.0 million. (CHART 15) Five new project starts are requested for FY 1992, three in ES&H, one in Safeguards and Security (S&S), and one in the Facility Capability Assurance Program (FCAP). In the ES&H area, two new starts at Rocky Flats will enhance air monitoring systems both on and offsite and will replace a plantwide fire and security alarm system. The other ES&H project will replace public address systems at Kansas City, Pantex, Mound Plant, and Y–12 with an Emergency Notification System to comply with requirements of the National Fire Association, Occupational, Safety and Health Administration, and the DOE.

The S&S new start at Rocky Flats will provide for physical barriers, electronic surveillance, security equipment, and modifications to existing facilities to address vulnerabilities to special nuclear material and other vital assets.

The FCAP new start will replace/refurbish 1940 vintage elevators at the Y–12 plant in the production buildings. These elevators are a primary and necessary means for transporting weapons-related materials and assemblies from one manufacturing area to another.

PRODUCTION AND SURVEILLANCE—FY 1992 CONSTRUCTION—NEW STARTS

[In millions of dollars]

	TEC	Fiscal year 1992 request	Future years
88–D–122 (FCAP)—Replace, refurbish deteriorated elevators—Y–12 plant	$12.6	$2.6	$10.0
92–D–122 (ES&H)—Health, physics environmental project at Rocky Flats	27.6	7.2	20.4
92–D–123 (ES&H)—Plant fire/security alarm system replacement—Rocky Flats	54.0	5.2	48.8
92–D–126 (ES&H)—Replace emergency notification systems, various locations	43.2	4.2	39.0
92–D–125 (S&S)—MSSA/MSTF security upgrades at Rocky Flats	23.9	3.5	20.4
Total—Production and surveillance new starts	161.3	22.7	138.6

CHART 15.—P&S CONSTRUCTION—NEW STARTS

WEAPONS RESEARCH AND DEVELOPMENT BUDGET REQUEST

[In millions of dollars]

	Fiscal year—		
	1990	1991	1992 request
Operating expenses	$1,027.0	$1,042.2	$1,047.6
Capital equipment	92.3	108.4	105.1

WEAPONS RESEARCH AND DEVELOPMENT BUDGET REQUEST—Continued

[In millions of dollars]

	Fiscal year—		
	1990	1991	1992 request
Construction	99.5	104.3	109.9
Total R&D	1,218.8	1,254.9	1,262.6

CHART 16.—R&D SUMMARY

(CHART 16) The Weapons R&D Program provides the primary scientific and technological underpinning for U.S. nuclear deterrence. Major goals are to maintain the credibility of the nuclear weapons stockpile, to provide new weapons designs, and to assess evolving threats to avoid technological surprise by an adversary. This request reflects structural changes in the budget in that further threat assessment work in NDEW is now incorporated into—the R&D program technology base. Technology Base, the foundation of the program, includes both weapons research and enabling technology. It consists of an array of scientific and engineering experts, a unique array of highly specialized facilities, and fundamental research in specific areas. It integrates these elements into a coherent set of ongoing applied nuclear weapons research activities.

LABORATORY MANPOWER—RD&T LABORATORY EMPLOYMENT

[Full-time equivalents]

	Fiscal year—		
	1990	1991	1992 request
Lawrence Livermore National Laboratory	3,550	3,121	2,951
Los Alamos National Laboratory	2,585	2,371	2,276
Sandia National Laboratory	3,632	3,114	2,874
Total RD&T employment	9,767	8,606	8,101

CHART 17.—RD&T LABORATORY EMPLOYMENT

(CHART 17) Research, development and testing funded employment continues to decline. As compared to FY 1991, the FY 1992 request results in a reduction of almost 6 percent, about 500 FTEs. Constant reductions in manpower continue to reduce the nuclear competence of the weapons program. Such skills are not available in the private sector and, when they are lost, they take many years to replace.

TOTAL RESEARCH AND DEVELOPMENT FUNDING

[In millions of dollars]

	Fiscal year—		
	1990	1991	1992 request
Core Program	$950.9	$1,079.9	$1,080.1
Nuclear-directed energy weapons	98.7		
Inertial fusion	169.2	175.0	182.5
Total R&D	1,218.8	1,254.9	1,262.6

CHART 18.—R&D PROGRAM BUDGET SUMMARY

(CHART 18) The FY 1992 request for Research and Development (R&D) is $1.263 billion, an increase of less than 1 percent over FY 1991. We continue in a transitional mode, changing our emphasis in weapons development from yield, size, and weight toward survivability, safety, security and command and control. There is continued support for Revitalization Programs and Safeguards and Security Construction Projects. This budget request reflects the general budget constraints under which we operate and the need to allocate scarce funding to other high priority activities.

CORE PROGRAM

[In millions of dollars]

	Fiscal year—		
	1990	1991	1992 request
Operating expenses:			
Technology base	$344.6	$429.1	$389.9
Weapons development, engineering, and certification	357.4	364.1	373.3
Special projects	52.3	47.7	54.9
Tech commercialization		20.0	32.0
Emergency preparedness	2.7	23.4	32.2
Subtotal, operating expenses	777.0	884.3	882.3
Capital equipment:			
R&D basic equipment	64.1	45.4	60.8
R&D computers	14.0	45.9	27.1
Subtotal, capital equipment	78.1	91.3	87.9
Construction:			
General plant projects	19.7	20.0	21.4
Other construction	76.1	84.3	88.5
Subtotal, construction	95.8	104.3	109.9
Subtotal, R&D program	950.9	1,079.9	1,080.1

CHART 19.—CORE PROGRAM BUDGET

(CHART 19) The Core Program budget provides for various elements running the gamut from Technology Base to Weapons Development, Engineering and Certification to Emergency Preparedness, to Construction and Revitalization.

In early summer, in cooperation with the DOD, we will complete the Nuclear Weapons Development Guidance (NWDG) which is the document which transmits the DOD long-term nuclear weapons technological needs for the DOE. This biennial document is the result of several months cooperative effort between the DOE and the DOD to identify research in support of the DOD long-term potential needs. This collaborative effort serves as a mechanism to better focus the DOE's research in support of the weapons development program.

Technology Base funding is requested at $390 million, about a 9 percent reduction from FY 1991 levels. The requested budget will continue the recent decline in support for the basic applied sciences, supporting technologies, and threat assessment needed to maintain a credible nuclear weapon strategic force. Research and development work will continue at a slower rate in most areas, particularly in activities impacting the future.

Weapons Development, Engineering and Certification funding is requested at about $373 million, about 2 percent above FY 1991. Developmental efforts will concentrate on safety and security concerns. There will be continued support for development systems in Phase 3 and beyond and low level support on Phase 1 and 2 studies.

The increase for Special Projects will provide for operating expenses associated with upgrading the Chemistry and Metallurgy Research Building at Los Alamos, specifically the development of a safety analysis report and the preparation of as built drawings, and special studies (CHART 20). The increase in Technology Commercialization provides for an expanding program including seven new pilot projects. Most Emergency Preparedness activities will continue the current level of effort with the increased funding supporting the Aerial Measurement System and the Atmospheric Release Advisory Capability which was recently transferred to the weapons program.

RESEARCH DEVELOPMENT—INERTIAL FUSION

[In millions of dollars]

	Fiscal year—		
	1990	1991	1992 request
Operating expenses:			
Gas	$35.8	$28.7	$28.9
Glass	96.5	98.1	103.0
Pulsed power	27.4	29.3	31.5
Supporting activities	.9	1.8	1.9
Subtotal, operating expenses	160.6	157.9	165.3
Capital equipment	8.6	17.1	17.2
Subtotal, inertial fusion	169.2	175.0	182.5

Chart 21.—Inertial Fusion by Technology

(CHART 21) The FY 1992 budget request for IF is $165.3 million for operating expenses and $17.2 million for capital equipment, an overall increase of slightly more than 4 percent. Within the available budget, this request reflects the recommendations of the NAS report. Funding is no longer included for further development of the Aurora KrF laser at LANL due to higher priority IF requirements. Emphasis will focus on completing development of "Precision NOVA," conducting target experiments, and initiating development of a NOVA laser beamlet. Level of effort will continue on the direct drive cryogenic experimental activities on the OMEGA laser. Work will continue on developing, constructing, and evaluating pulsed power sources for inertial fusion and on conducting experiments on HERMES III and PBFA II.

RESEARCH AND DEVELOPMENT—CAPITAL EQUIPMENT SUMMARY

[In millions of dollars]

	Fiscal year—		
	1990	1991	1992 request
R&D program:			
R&D basic equipment	$64.1	$45.4	$60.8
R&D computers	14.0	45.9	27.1
Total, R&D program	78.1	91.3	87.9
NDEW	5.6	....	....
Inertial fusion	8.6	17.1	17.2
Total, R&D capital equipment	92.3	108.4	105.1

Chart 22.—R&D Capital Equipment

(CHART 22) R&D program Basic Equipment budget supports purchase of new capability or improved efficiency with one MIE, a Radic Communication System at Los Alamos. The request also includes $9.5 million for the capital aspects of upgrades required to maintain the safety and operability of the Chemistry and Metallurgy Research Building at Los Alamos. R&D computer requirements will continue to be supported but at lower levels than previously. This request supports purchase of eight new computers.

For the IF program, the request provides for ongoing support and the upgrade of the OMEGA laser.

RESEARCH AND DEVELOPMENT—CONSTRUCTION SUMMARY

[In millions of dollars]

	Fiscal year— 1990	Fiscal year— 1991	Fiscal year— 1992 request
Programmatic construction:			
Revitalization	$55.2	$82.1	$82.3
R&D support facilities	13.3		
Other programmatic:			
R&D—GPP	19.7	20.0	21.4
NDEW	3.7		
Subtotal, other programmatic	23.4	20.0	21.4
Total programmatic construction	91.9	102.1	103.7
Safeguards and security	7.6	2.2	6.2
Total, R&D construction	99.5	104.3	109.9

CHART 23.—R&D CONSTRUCTION SUMMARY

(CHART 23) The construction request for R&D is about $110 million. Work on General Plant Projects will continue at about present levels. The Revitalization program, initiated in FY 1984 to provide for the construction of new facilities and modifications, relocations, and additions to existing facilities for the nuclear research, development and testing complex, continues at about the same level as last year.

There are three new starts within Research and Development (CHART 24).

RESEARCH AND DEVELOPMENT—CONSTRUCTION NEW STARTS

[In millions of dollars]

	TEC	Fiscal year 1992 request	Future years
92-D-102 nuclear weapons R&D facilities revitalization, phase IV, V2:			
Gas line replacement, LANL	$4.4	$4.4	
Infrastructure mod, LLNL	12.7	1.2	$11.5
Robotic manufacturing science and engineering facility, SNL	33.0	1.0	32.0
Total R&D new starts	50.1	6.6	43.5

CHART 24.—R&D CONSTRUCTION—NEW STARTS

The Gas Line Replacement, LANL, is required to replace the most deteriorated portion of the 130 mile natural gas line that services LANL. $4.4 million is requested in FY 1992.

Infrastructure Modernization at LLNL is aimed at replacing and refurbishing the portions of LLNL utility systems and other infrastructure that are old and deteriorated. $1.2 million has been requested to initiate the effort in FY 1992. In FY 1992, the effort will focus on water system upgrades. The total project is estimated to cost $12.7 million.

Robotics Manufacturing Science and Engineering Laboratory, SNLA, will provide the capability to enhance robotics research at SNLA. Currently, robotics research at SNLA is conducted in 19 separate locations. The project will permit a focused research effort that will result in improved and safer materials handling and production processes for future operation. The total estimated project cost is $33.0 million. $1.0 million has been requested in FY 1992 to start the project.

RESEARCH AND DEVELOPMENT—SAFEGUARDS AND SECURITY CONSTRUCTION

[In millions of dollars]

	Fiscal year—		
	1990	1991	1992 request
R&D S&S construction	$7.6	$2.2	$6.2

CHART 25.—SAFEGUARDS AND SECURITY CONSTRUCTION

(CHART 25) The FY 1992 request includes $6.2 million to continue our efforts to improve our overall safeguards and security posture. The request consists of $1.5 million at Los Alamos, project 88–D–104, and $4.7 million at LLNL, project 87–D–104.

The Los Alamos project provides for the continuation of improvements for the safeguarding of special nuclear materials and information. The project is aimed at improving measures for detection and neutralization of unauthorized entries; countermeasures against attempts to remove material; detection of small losses of special nuclear materials; and physical protection of sensitive areas.

The LLNL project is aimed at meeting current Departmental threat guidance. The project will put in place a layered security system which places the most stringent access controls on the highest risk targets. The project will be completed in the late FY 1992.

WEAPONS TESTING BUDGET REQUEST

[In millions of dollars]

	Fiscal year—		
	1990	1991	1992 request
Operating expenses	$504.5	$437.3	$447.5
Capital equipment	32.9	33.6	34.5
Construction	15.9	11.3	19.4
Total weapons testing	553.3	482.2	501.4

CHART 26.—WEAPONS TESTING

(CHART 26) Nuclear weapons testing is our only method for determining the reliability and nuclear performance of weapons. Testing is critical to understanding and improving nuclear weapons performance. As a result, nuclear testing represents the highest priority experimental program in research and development. Objectives of the testing program include: maintain confidence in the stockpile; develop safer, secure, effective weapons; ensure the survivability of weapons; explore new weapons concepts to avoid technological surprise; and improve understanding of weapons performance.

The Technology Base supports research and development to improve our understanding of the physical processes relevant to nuclear design. Weapons Development, Engineering and Certification (WDEC) supports work on the current stockpile and near-term improvements to the stockpile. Testing Capabilities supports our capability to conduct full-scale underground nuclear and nonnuclear tests.

WEAPONS TESTING FUNDING

[In millions of dollars]

	Fiscal year—		
	1990	1991	1992 request
Testing CORE Program	$473.1	$482.2	$501.4
Nuclear-directed energy	80.2		
Total weapons testing	553.3	482.2	501.4

CHART 27.—TESTING

(CHART 27) The FY 1992 request for the Testing Program is $501 million, an increase of 4 percent over FY 1991. The budget supports testing at a reduced level and provides for continuation of an important construction project at the Nevada Test Site.

WEAPONS TESTING—CORE PROGRAM

[In millions of dollars]

	Fiscal year—		
	1990	1991	1992 request
Operating expense:			
Technology base	$156.5	$140.1	$147.7
Weapon, development, engineering, cert	109.7	129.0	127.7
Testing capabilities	156.4	163.2	167.1
Marshall Island	5.3	5.0	5.0
Subtotal, operating expense	427.9	437.3	447.5
Capital equipment: Testing—basic equipment	29.3	33.6	34.5
Subtotal, capital equipment	29.3	33.6	34.5
Construction:			
General plant projects	6.6	7.1	7.4
Construction safeguards/security	9.3	4.2	12.0
Subtotal construction	15.9	11.3	19.4
Total testing—CORE Program	473.1	482.2	501.4

CHART 28.—TESTING—CORE PROGRAM

(CHART 28) The FY 1992 budget request is for $501.4 million of which $447.5 million is operating expenses, $34.5 million for capital equipment, and $19.4 million for construction. [Deleted] In addition, weapons testing continues to contribute support for Defense Nuclear Agency weapons effects tests.

The budget request supports a continued level of effort for testing capabilities and health and environmental studies for the Marshall Island people.

WEAPONS TESTING—CONSTRUCTION

[In millions of dollars]

	Fiscal year—		
	1990	1991	1992 request
CORE Program:			
General plant projects	$6.6	$7.1	$7.4
Construction safeguards/security	9.3	4.2	12.0
Total, construction	15.9	11.3	19.4

CHART 29.—CONSTRUCTION

(CHART 29) The major component of the construction request is $12.0 million for the Combined Device Assembly Facility (CDAF). The CDAF is a modern facility for nuclear test device assembly functions with a capability for disassembly of damaged or disabled nuclear weapons at the Nevada Test Site.

WEAPONS TESTING—CAPITAL EQUIPMENT

[In millions of dollars]

	Fiscal year—		1992 request
	1990	1991	
Capital equipment	$32.9	$33.6	$34.5

CHART 30.—TESTING—CAPITAL EQUIPMENT

(CHART 30) Test program activities continue to be supported. There will be a greater reliance on utilizing an inventory of older equipment due to funding constraints. Some needed state-of-the-art equipment will not be available.

PROGRAM DIRECTION

Program Direction funding contained in the weapons programs account provides funds for personnel and contractual services-related expenses for: the Office of the Assistant Secretary for Defense Programs; Deputy Assistant Secretaries for Planning and Resource Management, Weapons Complex Reconfiguration, and Military Application; Albuquerque, San Francisco, and Nevada Operations Offices; the Office of Nuclear Self-Assessment and Emergency Management; and the Rocky Flats Program Office. The Community Assistance Program at Los Alamos, New Mexico, as required by Public Law 94–187, is also provided by this account.

The FY 1992 budget request is $164.0 million, 54 percent above the FY 1991 level. This will support development of the PEIS associated with the Defense Complex Reconfiguration. The PEIS, which will take 3 years to prepare, will analyze alternatives for the configuration of Complex 21 and, to ensure continued NEPA compliance, will be the basis for later project-specific and sitewide reviews. Based on the PEIS, the Secretary will issue a Record of Decision to document his selection of the final configuration of Complex 21.

SUMMARY

In closing, I want to assure you that we are committed to maintaining the nuclear deterrent—a key element of our national security. We are also committed to safe and secure operations—safety of our employees and safety of the public. And finally, we are committed to maintaining a viable nuclear weapons complex—to assure that we meet our Nation's needs today, and modernize to meet tomorrow's needs as well. We recognize these tasks will be difficult in the face of constrained funding and mission accomplishment will continue to present difficult choices. But we intend to carry out our national security responsibilities to the best of our ability within the resource levels available. I thank you for your support in the past, and seek your support for the funding request presented to you today.

STATEMENT OF STEVEN D. RICHARDSON

INTRODUCTION

Mr. Chairman and Members of the Committee: I am Steven D. Richardson, Deputy Assistant Secretary for Nuclear Materials, under the Assistant Secretary for Defense Programs, Richard A. Claytor, of the U.S. Department of Energy (DOE). I appreciate this opportunity to provide testimony regarding the Department's Nuclear Materials (NM) program and its budget request for FY 1992.

The principal mission of the NM program is to provide nuclear materials to meet national defense requirements. This mission, founded in the Atomic Energy Act of 1954, will exist as long as nuclear deterrence plays a role in the Nation's defense strategy. Fundamental to meeting that mission is the maintenance of a safe, reliable, production complex capable of responding to changing demands. The principal nuclear materials required to meet national defense requirements are tritium, plutonium, and enriched uranium. Specific requirements for these materials are defined in the Nuclear Weapons Stockpile Memorandum (NWSM), updated and approved by the President annually. The requirements forecast in the stockpile memorandum are developed by the Department of Defense (DOD) in consultation with the DOE's Office of Military Application (OMA).

In addition, the NM program also produces and provides nuclear materials for use in Government research and development activities and in civilian research, commercial, and medical applications. The program has provided highly enriched uranium in the form of metal or oxide for nuclear fuel fabrication for DOE, domestic, and foreign research and test reactors; byproduct isotopes such as californium-252, americium-241, krypton-85, and cobalt-60 to DOE's isotope sales pool for commercial and medical uses; and other isotopes such as plutonium-238 for the National Aeronautics and Space Administration's space program. Additionally, spent fuels from the U.S. Navy's nuclear propulsion reactors and from research reactors are processed, and the recovered uranium is recycled into DOE production reactors.

Projected future requirements for nuclear materials have decreased dramatically since the Department submitted its FY 1991 budget request. This decrease and anticipated future funding limitations have resulted in decisions to operate fewer NM facilities. I will begin by discussing currently forecast requirements and then, I will address the program activities included in the FY 1992 budget.

MATERIALS REQUIREMENTS

Historically, the NM program has been responsible for the production of new or virgin nuclear materials for defense use in N Reactor at Richland, Washington, and the Savannah River Site (SRS) reactors in Aiken, South Carolina. The recycle of material and residues from retired weapons and the weapons manufacturing process were historically the responsibility of OMA. However, in the mid to late 1980's as plutonium residues from weapons production and recycle activities accumulated at the Rocky Flats Plant (RFP), excess capacity in NM facilities at SRS and Richland was utilized to assist in reprocessing these these materials. Currently projected plutonium requirements can be met through the recycle of material from retired weapons and the recovery from accumulated residues. Therefore, no reactor production of plutonium has been planned for the foreseeable future and a decision has been made to shut down N Reactor. The ability to meet plutonium requirements, therefore, is highly dependent on weapons recycle and residue processing activities. The NM facilities at SRS are expected to provide a major portion of DOE's capacity for these activities.

TRITIUM

Tritium in the weapons stockpile decays at the rate of about 5.5 percent per year. Therefore, to maintain the effectiveness of weapons in the stockpile, tritium components are exchanged and recycled. In addition to this recycle work, new weapons, which replace retired weapons in the stockpile, require tritium.

The SRS production reactors are the Nation's sole source for the production of tritium to meet the military needs of DOD and other Government and civilian requirements. These reactors have not operated since April 1988, and the demand for tritium is currently being met with existing inventories and DOD weapons returns.

(CHART 1) This chart shows the SRS tritium inventory from the beginning of October 1989 and as currently projected through October 1998 under various reactor scenarios. The chart shows the net available tritium on hand at SRS after satisfying the needs of the stockpile. The solid horizontal line labeled "minimum" represents the estimated minimum amount of pipeline inventory required to operate the tritium processing facilities. The complex has historically operated with a larger working inventory. The other horizontal line represents the amount of tritium necessary to meet the "minimum" inventory plus produce a 5-year reserve [deleted] over the period of the analysis. The remaining data on this chart shows the expected available tritium reserve under reactor scenarios of (1) no restart (nonhorizontal line); and (2) a July 1991 restart of K Reactor at 50 percent of full-power level (bars).

PLUTONIUM

(CHART 2) This chart summarizes the RFP specification plutonium inventory situation after satisfying the stockpile requirements. The plutonium required for building new warheads is obtained by the recovery and recycle of materials from retired weapons returned by DOD to DOE and the recovery of plutonium from the backlog of nonspecification weapon-grade plutonium.

The plutonium facilities at SRS are now in a period of transition from supporting reactor plutonium production to supplementing the RFP weapons recycle and residue processing functions which are of insufficient capacity to meet currently identified needs. This transition involves the restoration of capabilities at SRS to permit the recycle of retired weapons materials and the recovery of plutonium residues from the RFP. With the cessation of reactor production of plutonium and complete reliance on recycle and residue recovery, the SRS offsite processing capability plays an essential part in our plutonium supply assessment.

Although the chart shows an increase in the available weapon-grade plutonium in later years, it demonstrates that in the near term we are very dependent on our processing capacity to get it into the proper form for fabrication. This presumes DOE is capable of processing the retirements and scrap inventory to meet the chemical and isotopic specifications required for use in new weapons. The near-term loss or delay of any of this capability would impact specification-plutonium supply.

ENRICHED URANIUM

(CHART 3) I also need to mention the supply of highly enriched uranium for U.S. weapons. The U.S. weapons program has operated within its existing inventory of enriched uranium for the last 27 years without having to obtain additional material from the uranium enrichment complex. This has been accomplished by the recovery and recycle of enriched uranium from retired warheads and using existing inventories.

Due to the planned reduction in the number of weapons in the stockpile, we expect to continue to meet requirements through recovery and recycle. Furthermore, DOE is studying how to best utilize the predicted large stockpile reserves.

PROGRAM OVERVIEW

(CHART 4) Historically, the NM complex has consisted of feed materials production facilities at Fernald and Ashtabula, Ohio; fuel and target fabrication, processing, and reactor facilities at Richland, Washington, and Aiken, South Carolina; uranium recycle and recovery facilities at the Idaho Chemical Processing Plant (ICPP) near Idaho Falls, Idaho; and supporting capabilities at the Y-12 Plant in Oak Ridge, Tennessee, and the Los Alamos National Laboratory (LANL), Los Alamos, New Mexico. For FY 1992, the total budget request for NM is $1.88 billion. This represents a 20 percent decrease from the FY 1991 appropriation of $2.34 billion and is the result of our decisions to operate fewer facilities. Four major program reductions have been identified in our FY 1992 budget submission: (1) transfer of the feed materials facilities at Fernald and Ashtabula, Ohio, to the Office of Environmental Restoration and Waste Management (EM); (2) transfer of all Hanford facilities, including the N Reactor and PUREX, to EM; (3) operation of only one SRS production reactor and (4) cancellation of the Special Isotope Separation program.

Our budget submission reflects our commitment to the Secretary of Energy's new operating philosophy, which requires that all operations be conducted in a manner protective of the safety and health of the workers and the public, as well as the environment. To this end, we have established the following priorities for the management, operation, and maintenance of our facilities: (1) the NM facilities will be operated in a safe, secure, and environmentally responsible manner, such that there are no significant risks due to these operations; (2) the NM facilities/operations will be in compliance with all applicable laws, regulations, agreements (Federal/State/local), and DOE policy/orders unless granted an exception by the appropriate authority; (3) the NM nuclear facilities will achieve a standard of operation generally accepted in the commercial nuclear industry and minimize the generation of waste; and (4) the NM facility operations will achieve a standard of excellence in all aspects.

Now I will discuss specific program activities at each of the sites involved in NM activities.

SAVANNAH RIVER SITE

(CHART 5) SRS is the focus of NM program activities. SRS funding constitutes approximately 78 percent of the NM budget request. SRS provides the Nation's only source of tritium, which is vital to the maintenance of an effective nuclear deterrent. The site also operates facilities that have an essential role in the effective management of our plutonium inventory, without which the Department could not have halted reactor production of new plutonium. Additionally, SRS provides support to DOD, the National Aeronautics and Space Administration (NASA), and DOE through the manufacture, processing, and packaging of plutonium-238 for use as heat sources for generating electricity.

REACTOR RESTART

(CHART 6) The Department remains committed to resuming, as soon as possible, the safe production of tritium at SRS in order to properly test systems modifications and demonstrate that these facilities can continue to provide material.

Since August 1988, the production reactors at SRS have been in an extended outage during which safety concerns are being addressed. Four principal areas for improvement have been identified: design bases and system performance, human performance, management systems and practices, and DOE onsite technical vigilance and oversight. DOE's objective is to assure that its reactors can produce nuclear materials reliably and in a manner that protects the safety and health of its workers and the public, as well as the environment. Major improvements that will be completed prior to reactor restart include: establishment of reactor power limits to assure the capabilities of the Emergency Core Cooling Systems (ECCS) will not be exceeded in the event of a design basis Loss Of Coolant Accident (LOCA), verification of and improvements to the strength and integrity of the primary coolant system (including the reactor vessel), and considerably expanded training and knowledge requirements for reactor operations personnel.

On December 13, 1990, the Department issued an Environmental Impact Statement (EIS) on the continued operation of the SRS reactors. A Record of Decision (ROD) was issued on February 4, 1991, that formalizes the Department's decision to operate K Reactor and defer until later the operation of L Reactor at SRS. Operation of P Reactor will be deferred indefinitely and that reactor will be maintained in cold standby.

The Department will proceed with the safety upgrades and management system improvements currently scheduled for K Reactor in its program to satisfy the criteria of the Safety Evaluation Report (SER) and will conduct an Operational Readiness Review (ORR). Satisfaction of the SER criteria and completion of the ORR will demonstrate that the safety and health criteria for the resumption of production have been met. K Reactor is expected to restart in the summer of 1991. There are, however, concerns regarding the outcome of pending litigation and completion of systems testing that could impact that schedule. Similar processes for L Reactor will be pursued to make that reactor ready to resume production if needed. Our intent is to maintain L Reactor in a ready to operate status in the event of problems with K Reactor operation. Only when the Secretary of Energy is personally assured that safety and health requirements have been met for a reactor, will he consider authorizing the restart of any of the reactors.

Upgrade and modification activities at P Reactor are now being discontinued. Failure to expeditiously close out P Reactor activity would result in increased FY 1992 funding requirements. P Reactor will be defueled, the heavy water moderator will be stored, and critical equipment and systems will be protected to prevent deterioration. When these actions are complete, a skeleton staff will be organized to maintain protection of the reactor.

Discontinuation of P Reactor activities could result in the loss of up to 2,200 jobs by September 1992. The DOE and Westinghouse Savannah River Company are making every effort to ensure that personnel are appropriately placed in vacancies where additional resources are required in other areas of the site.

The DOE will continue its interactions with regulatory agencies to ensure that actions implemented in accordance with this ROD and the ensuing Mitigation Action Plan comply with applicable regulatory requirements.

FY 1992 funding for SRS reactor activities provide for the operating staff necessary to support the safe and reliable operation of one reactor and maintenance of another in standby. Adequate shift manning, as well as allowances for shift personnel training, are fully supported. Continued emphasis will be placed on the Reactor Safety Improvement Program (RSIP) procedures upgrade program and other RSIP programs.

NONREACTOR FACILITIES

(CHART 7) Operation of the SRS nonreactor facilities is critical to the NM mission. These nonreactor facilities include fuel and target fabrication facilities' materials processing facilities, and the power plant.

The nonreactor facilities require enhancements similar to those identified in the reactor restart program. To improve the conduct of operation of its nonreactor facilities, SRS has developed a Nuclear Materials Processing Division Performance Improvement Plan. It includes: (1) an enhanced training program for nonreactor facility operators (fuel and target fabrication; plutonium, uranium, and tritium processing plants; power plants; and other supporting facilities); (2) an operational improvement program with performance guidelines in conduct of operations, conduct of technical support, conduct of maintenance, and organization and administration. It also includes new management systems required to support excellence in operations. The FY 1992 funding will continue the implementation of these activities.

The FB Line which processes plutonium nitrate into a final, specification grade, metal form will be approaching full capacity. The New Special Recovery Facility, scheduled for startup in June 1991, will continue to process onsite and offsite plutonium-239 scrap, and the metal dissolver will commence operations in mid-FY 1992 supporting plutonium recovery/reprocessing requirements from site returns. H Canyon will be operated to process irradiated reactor fuel, as well as fuel from Government research reactors.

Full operation of the Uranium Solidification Facility (USF) will commence in FY 1992. This facility is designed to process liquid uranyl nitrate hexahydrate, into an oxide for shipment to the Y–12 Plant for reprocessing. The timely startup and operation of this facility are essential to our ability to provide tritium for the weapons program. The SRS storage capacity for the liquid, which results from the processing of irradiated fuel from reactor operations, is adequate for about 12 months of operation of the H Chemical Processing Plant. Failure to operate USF by the 2nd quarter of FY 1993 would, therefore, result in our inability to retrieve all the tritium targets in the reactor basin and eventually to discharge any additional material from the reactors.

NUCLEAR MATERIALS FOR NONWEAPON USE

(CHART 8) Plutonium-238 (Pu-238) requirements have been identified by the DOE, the Department of the Navy, and NASA. Radioisotope Thermoelectric Generators (RTGs) produce electricity from heat generated by Pu-238. The RTGs are the enabling technology for a wide range of NASA deep space and planetary exploration missions and for DOE national security missions. The Pu-238 is the optimum fuel for powering RTGs.

In the near term, the entire inventory of Pu-238 scrap will be processed in HB Line Phase I and Phase III and H Chemical Processing Plant at SRS to provide Pu-238 oxide to the LANL for fabrication of fuel forms. Operations of these facilities are scheduled to begin in the third quarter FY 1991 and extend through FY 1992 and into FY 1993 to meet the material requirement at LANL. This will allow us to meet requirements for two NASA missions, Comet Rendezvous and Flyby (CRAF) and Cassini. For the long term, the Department will rely upon SRS to produce new Pu-238 to meet the needs of future missions. To accomplish production of new Pu-238, steps are being taken to support startup of HB Line Phase II in June 1992 to produce neptunium-237 (Np-237) oxide. In addition, the Actinide Billet Line is being refurbished, and the Pu-238/Np-237 separation frames are being readied for installation into the H Chemical Processing Plant in FY 1992.

Production of new Pu-238 will be done as follows: HB Line Phase II will produce Np-237 oxide that is fabricated into billets in the Actinide Billet Line. The billets are then extruded into targets in the fuel and target manufacturing area. The targets will be irradiated in a mixed tritium/Pu-238 charge in K Reactor. After irradiation, the targets are cooled for a minimum of 7 months and then dissolved in H Chemical Processing Plant. The Pu-238 is separated from the Np-237, and both products are recovered. This is a lengthy process and will require program coordination of integrated schedules in order to produce desired quantities of material when needed.

IDAHO CHEMICAL PROCESSING PLANT

(CHART 9) The funding for ICPP increases by $47 million from FY 1991 to FY 1992. This facility stores and reprocesses spent fuel from the Navy's nuclear propulsion program. Through reprocessing of this fuel, usable uranium is recovered. The ICPP receives spent nuclear navy fuel on schedules consistent with returns of the Navy's nuclear fleet. Subsequently, the recovered material is shipped for further processing at Oak Ridge for possible use in the SRS reactors.

The major reason for the increase in funding is to upgrade and improve the ICPP to commercial and naval reactor standards. Compliance with new DOE orders in the areas of radiological effluent monitoring, radiation protection of workers, training accreditation, and implementation of the Institute of Nuclear Power Operations (INPO) standards has resulted in increased funding needs. Project upgrades to assure environmental compliance have also been undertaken.

Long-term planning is based on forecasts of annual fuel shipments to ICPP. On this basis, plans are made as to what facilities and resources are required to properly manage, store, and process these fuels. Because large increases in fuel receipts are projected in coming years, achieving the assigned mission of the ICPP will require upgrading of existing facilities, building some new facilities, and obtaining sufficient operating funding to run the facilities safely, efficiently, and in an environmentally acceptable manner.

In addition, the ICPP is continuing modernization efforts to replace original equipment and facilities dating back to the 1950's. Modernization of the plant began with construction of the Fluorinel Dissolution and Fuel Storage Facility, which was initiated in the late 1970's. That facility replaced old, outdated fuel storage capabilities and provided needed improvements to fuel dissolution capabilities.

Two major projects are currently underway and are continued through the FY 1992 budget: the Fuel Processing Restoration (FPR) project and the Fire Protection Upgrade project.

The FPR project will replace the original uranium purification system with modern facilities, thereby increasing reliability and enhancing the safety of these operations. The benefits from completing this project are considerable: improvement of personnel safety by reducing radiation exposure, reduction of radioactive waste generation, compliance with today's more rigorous environmental protection standards, reduction of environmental discharges through the recycle of process water, and enhancement of nuclear criticality safety.

A second project of significance is the Fire Protection Upgrade project. This project will correct life safety and fire protection deficiencies identified by independent studies.

HANFORD

(CHART 10) The major reduction to NM funding at Richland is the result of the proposed transfer of this site to EM. The $33 million requested supports NM disposition activities which are expected to remain the responsibility of Defense Programs (DP).

In our analysis of currently projected plutonium requirements, the Department has determined that operation of N Reactor, the Plutonium Uranium Extraction (PUREX) Plant, and the Plutonium Finishing Plant (PFP) located at the Hanford Site is no longer required to support the weapons program. The Secretary has announced his intent to prepare an Environmental Impact Statement (EIS) to determine the best means to process, as waste, the remaining irradiated N Reactor and other Hanford Site fuels. This EIS will be managed by EM.

In FY 1991, activities conducted by the NM program at Richland are reflective of this determination. We will operate the Plutonium Reclamation Facility only as necessary to stabilize and prepare plutonium-bearing material for long-term storage and support cleanout activities needed to improve the safety posture of the facility. The N Reactor fuel in storage in the 105 K East Reactor basins is to be encapsulated to alleviate basin water contamination problems. The 105 K West Reactor fuel may require reencapsulation depending upon the result of a corrosion study now underway. The PUREX Plant is being placed in standby pending the results of the EIS on N Reactor and other Hanford Site fuels disposition. The UO_3 Plant may be readied to conduct a processing campaign to reduce the PUREX inventory of uranyl nitrate, converting it to oxide, to facilitate storage.

In order to effect an orderly transfer of Hanford Site facilities to EM, a task force has been formed to develop a transfer plan. The Department plans to fully effect the transfer by the end of FY 1991.

In FY 1992, NM will conduct materials identification and characterization activities, as well as provide for the safeguard and storage of the nuclear materials remaining onsite as a result of past DP operations.

OAK RIDGE

(CHART 11) The overall request for Oak Ridge operations drops significantly. The transfer of funding responsibility for enriched uranium used in fabricating naval reactor cores from DP to the Assistant Secretary of Nuclear Energy (NE) is the basic reason. In addition, funding for all but NM disposition activities at the Feed Materials Production Center (FMPC) has been eliminated with the transfer of FMPC to EM. However, funding for the Y-12 Plant increases to address facility modifications necessary for improving the health and safety of required operations. The Y-12 Plant provides highly enriched uranium and lithium in support of SRS reactor operation for tritium production.

FEED MATERIALS PRODUCTION CENTER

(CHART 12) The FMPC production operations are no longer required to support defense missions, and the facility was transferred to EM effective October 1, 1990. In a transfer plan approved by Secretary Watkins, EM assumed responsibility for the management of landlord and shutdown activities in addition to the continuation of their responsibility for ongoing waste management and restoration projects.

Defense Programs retained responsibility for managing the characterization, warehousing, and disposition of all nuclear materials through completion of these activities or until the materials are declared waste. The FY 1992 budget includes $10 million for these activities.

The FMPC has a large quantity of nuclear materials, including thorium and various enrichments of uranium, that is excess to DP needs. A nuclear materials disposition plan was included as an appendix to the FMPC transfer agreement. The Department is currently proceeding with the disposition of these materials.

Emphasis is being placed on the thorium stored at FMPC because it represents a potential hazard to worker health and safety and the environment. There are about 15,000 drums, containing approximately 1,100 metric tons of thorium in various forms, stored at FMPC. These drums are deteriorating. Approximately 98 percent of the drums have been sampled and found to contain no hazardous components; the remainder have not yet been sampled. There is no forecast use for thorium within DOE. The Defense Nuclear Stockpile Center has been advised of the availability of the material, and they have expressed no interest. Procedures dictate that the next step is to advertise the material's availability to other Federal agencies and industry.

Y–12

(CHART 13) The NM budget for Y–12 supports the processing of SRS and ICPP uranium materials used in support of production reactor operations. This processing includes the following: receipt, sampling, purification, and conversion to metal (or oxide if requested) of oxides received from SRS and ICPP; sampling and packaging for shipment of recycled uranium metal and/or virgin 93 percent metal from the Y–12 Plant to SRS; and processing uranium aluminum alloy scrap and other miscellaneous uranium-bearing salvage, such as noncombustible filters and solutions, received from SRS.

The recovery of uranium scrap generated from nonweapons activities includes: the reduction of uranium tetrafluoride (UF_4) to uranium metal (buttons) and the recovery of salvage generated in the reduction operation; the conversion of uranyl nitrate solution to oxide and the recovery of scrap from the Portsmouth Plant; and the processing of nonproduction unirradiated scrap which consists of uranium aluminum alloy, miscellaneous alloys, solids, combustibles, oxides, metals, solutions, etc., received from sources outside the Y–12 Plant.

Conceptual designs, miscellaneous studies, startup costs of projects, procurement of material for use in weapons; and various support functions such as safeguards, accountability, safety analysis, waste management, and contamination control are included in the request. This also includes capital equipment and construction considered essential to provide worker safety, environmental integrity, and continued operation of the facilities supporting the materials production program.

OAK RIDGE NATIONAL LABORATORY

The NM budget at the Oak Ridge National Laboratory (ORNL) supports a number of activities relating to the production, storage, and/or distribution of miscellaneous nuclear material isotopes.

The californium-252 (Cf-252) industrial sales/loan program involves the fabrication of neutron sources to fulfill the requirements of DOE and other Government agencies, and the preparation of bulk Cf-252 shipments for sale to industrial customers. This is the only source of Cf-252 in the Western World.

The Mark 42 processing program involves the processing of irradiated SRS target assemblies (designated Mark 42) at the ORNL Radiochemical Engineering Development Center to recover plutonium-242 (Pu-242), americium-243 (Am-243), and curium-244 (Cm-244) for use in weapons diagnostic programs.

Finally, ORNL operates the uranium-233 (U-233) Storage and Distribution Center. In FY 1992, we will continue to maintain the U-233 processing and support systems in a long-term, safe standby condition.

SUMMARY

(CHART 14) We feel that the FY 1992 budget submission provides a balanced program that continues to support the Secretary of Energy's initiatives for improvements in environment, safety, and health areas. We have addressed projected decreases in materials demand by making major scope reductions to our program. In so doing, we have attempted to maintain a sufficient capability to respond to potential changes in currently projected requirements. We believe that the FY 1992 request represents the minimum funding level required to responsibly meet the basic program activities outlined in my statement.

(Charts 1–3 deleted.)

CHART 4

FY 1992 CONGRESSIONAL BUDGET REQUEST
($ IN MILLIONS)

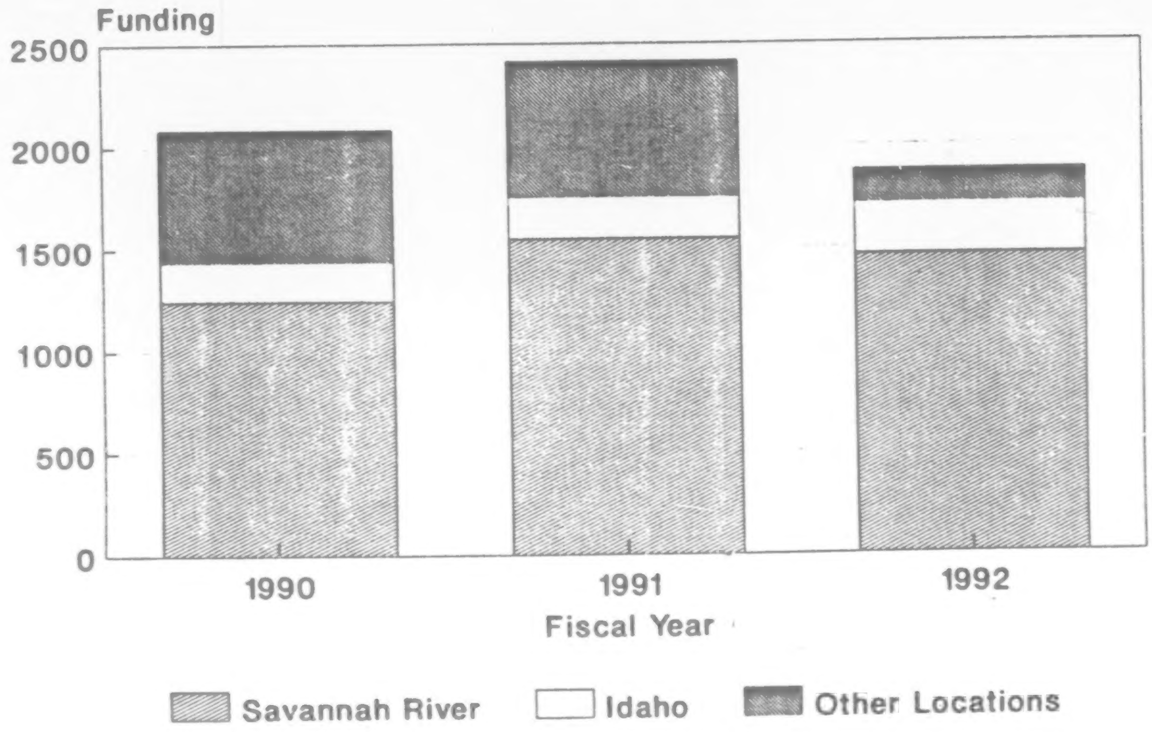


CHART 5

DEFENSE PROGRAMS — NUCLEAR MATERIALS

FY 1992 CONGRESSIONAL BUDGET REQUEST
($ IN MILLIONS)

SAVANNAH RIVER SITE

	FY 1990 ACTUAL	FY 1991 APPROP.	FY 1992 REQUEST
TOTAL	$1,246.0	$1,544.8	$1,460.9

0 RESUMPTION OF TRITIUM OPERATIONS IS HIGHEST PRIORITY AT SRS.

0 REACTOR RESTART EFFORTS ARE CONCENTRATED ON UPGRADE OF K AND L REACTORS.

0 NONREACTOR FACILITY IMPROVEMENTS ARE FOCUSED TO SUPPORT REACTOR RESUMPTION.

0 DEFENSE PROGRAMS AND NUCLEAR ENERGY ARE JOINTLY FUNDING PU-238 MISSION.

CHART 6

DEFENSE PROGRAMS — NUCLEAR MATERIALS

FY 1992 CONGRESSIONAL BUDGET REQUEST

SAVANNAH RIVER SITE - REACTOR RESTART

0 K REACTOR WILL RESUME OPERATIONS PRIOR TO FY 1992.

0 L REACTOR WILL BE MAINTAINED AT LEVEL TO BEGIN OPERATIONS WITHIN 12 MONTHS OF RESTART DECISION.

0 P REACTOR WILL BE SHUT DOWN.

CHART 7

DEFENSE PROGRAMS — NUCLEAR MATERIALS

FY 1992 CONGRESSIONAL BUDGET REQUEST
SAVANNAH RIVER SITE - NONREACTOR FACILITIES

0 IMPROVEMENTS TO NONREACTOR OPERATIONS ARE CRITICAL TO OUR ABILITY TO PROVIDE MATERIAL.

0 MAJOR ELEMENTS OF NONREACTOR IMPROVEMENTS PLAN:

- PERFORMANCE GUIDELINES;
- HUMAN PERFORMANCE;
- MANAGEMENT SYSTEMS;
- TRAINING; AND
- FACILITY IMPROVEMENTS.

CHART 8

DEFENSE PROGRAMS — NUCLEAR MATERIALS

FY 1992 CONGRESSIONAL BUDGET REQUEST

SAVANNAH RIVER SITE - NONWEAPON REQUIREMENTS

0 PU-238 REQUIREMENTS HAVE BEEN IDENTIFIED FOR NAVY, NASA, AND DOE.

0 ADDITIONAL FUNDING FOR THIS PURPOSE IS PROVIDED BY NE.

0 ACTIVITIES WHICH MUST BE COMPLETED AT SRS INCLUDE:

  - COMPLETION OF PU-238 BLEND PROGRAM TO RECOVER AVAILABLE MATERIAL;
  - PRODUCTION OF NP-237 IN HB LINE;
  - FABRICATION OF NP-237 INTO REACTOR TARGETS;
  - REACTOR IRRADIATION; AND
  - PROCESSING IN H CANYON, HB LINE AND 235-F.

CHART 9

DEFENSE PROGRAMS — NUCLEAR MATERIALS

FY 1992 CONGRESSIONAL BUDGET REQUEST
($ IN MILLIONS)
IDAHO CHEMICAL PROCESSING PLANT

	FY 1990 ACTUAL	FY 1991 APPROP.	FY 1992 REQUEST
TOTAL	$ 198.4	$ 207.4	$ 254.6

0 INCREASED FUNDING IS REQUIRED FOR EXTENSIVE TRAINING AND IMPLEMENTATION OF DOE ORDER 5480.18, ACCREDITATION OF PERFORMANCE-BASED TRAINING, INPO, AND OSHA STANDARDS.

0 FUEL PROCESSING RESTORATION PROJECT:

- IMPROVES PERSONNEL SAFETY BY REDUCING RADIATION EXPOSURE;
- REDUCES RADIOACTIVE WASTE GENERATION;
- REPLACES AGING PLANT WITH NEW MODERN FACILITY INCREASING RELIABILITY;
- COMPLIES WITH TODAY'S MORE RIGOROUS ENVIRONMENTAL PROTECTION STANDARDS;
- REDUCES ENVIRONMENTAL DISCHARGES THROUGH RECYCLE OF PROCESS WATER; AND
- PROVIDES ENHANCEMENTS TO CRITICALITY SAFETY.

0 ICPP FIRE PROTECTION PROJECT CORRECTS LIFE SAFETY AND FIRE PROTECTION DEFICIENCIES IDENTIFIED BY INDEPENDENT STUDIES.

CHART 10

DEFENSE PROGRAMS — NUCLEAR MATERIALS

FY 1992 CONGRESSIONAL BUDGET REQUEST
($ IN MILLIONS)

RICHLAND

	FY 1990 ACTUAL	FY 1991 APPROP.	FY 1992 REQUEST
TOTAL	$ 250.4	$ 220.2	$ 33.4

- MANAGEMENT RESPONSIBILITY FOR RICHLAND OPERATIONS WILL BE TRANSFERRED DURING FY 1991 TO THE OFFICE OF ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT.
- FY 1992 FUNDING IS TO PROVIDE FOR DISPOSITION OF EXISTING NUCLEAR MATERIALS.
- OPERATION OF PUREX AND PFP IS CONTINGENT UPON COMPLIANCE WITH NEPA REQUIREMENTS.

CHART 11

DEFENSE PROGRAMS — NUCLEAR MATERIALS

FY 1992 CONGRESSIONAL BUDGET REQUEST
($ IN MILLIONS)

OAK RIDGE

	FY 1990 ACTUAL	FY 1991 APPROP.	FY 1992 REQUEST
NAVAL REACTORS	$ 118.8	$ 117.8	$ 0
FERNALD	113.3	87.9	10.0
Y-12	18.8	19.4	36.4
ORNL	5.5	6.1	9.1
OTHER	5.5	4.5	2.0
TOTAL	$ 261.9	$ 235.7	$ 57.5

CHART 12

DEFENSE PROGRAMS — NUCLEAR MATERIALS

FY 1992 CONGRESSIONAL BUDGET REQUEST
($ IN MILLIONS)

FEED MATERIALS PRODUCTION CENTER (FMPC)

	FY 1990 ACTUAL	FY 1991 APPROP.	FY 1992 REQUEST
TOTAL	$ 113.3	$ 86.5	$ 10.0

- RESPONSIBILITY FOR MANAGEMENT OF REMEDIAL OPERATIONS WAS TRANSFERRED IN FY 1991 TO THE OFFICE OF ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT.
- NO FURTHER PRODUCTION. CLEANUP ONLY.
- DP FUNDING PROVIDED FOR DISPOSITION OF RESIDUAL MATERIALS.

CHART 13

DEFENSE PROGRAMS — NUCLEAR MATERIALS

FY 1992 CONGRESSIONAL BUDGET REQUEST
($ IN MILLIONS)

Y-12 - MARTIN MARIETTA ENERGY SYSTEMS, INC.

	FY 1990 ACTUAL	.FY 1991 APPROP.	FY 1992 REQUEST
TOTAL	$ 18.7	$ 19.5	$ 36.4

0 CONTINUED PURIFICATION AND CONVERSION OF HEU TO METAL.

0 SUPPORT RADIATION PROTECTION REQUIRED FOR CONTINUED DECONTAMINATION OF OPERATING AREA.

0 SUPPORT SAFETY ANALYSIS AND A PORTION OF THE PHYSICAL SECURITY OF THE Y-12 PLANT AND THE INTERNAL MATERIAL ACCOUNTABILITY AREAS.

0 SUPPORT ES&H IMPROVEMENTS TO COMPLY WITH DOE ORDERS AND LAWS.

0 SUPPORT PROGRAM NEEDS IN THE AREAS OF HEALTH, SAFETY, ENVIRONMENT, AND SAFEGUARDS AND GENERAL SUPPORT OF PROGRAMMATIC REQUIREMENTS.

CHART 14

DEFENSE PROGRAMS — NUCLEAR MATERIALS

FY 1992 CONGRESSIONAL BUDGET REQUEST
($ IN MILLIONS)
NUCLEAR MATERIALS PRODUCTION

	FY 1990 ACTUAL	FY 1991 APPROP.	FY 1992 REQUEST
OPERATING EXPENSES:			
REACTOR OPERATIONS	$ 723.8	$ 811.5	$ 584.5
PROCESSING	483.1	562.5	531.2
SPECIAL ISOTOPE SEPARATION	70.6	66.5	0
SUPPORTING SERVICES	241.8	292.0	305.4
PROGRAM DIRECTION	38.5	42.5	43.2
ENRICHED MATERIAL	118.8	117.8	0
SUBTOTAL, OPERATING EXPENSES	$1,676.6	$1,892.8	$1,464.3
CAPITAL EQUIPMENT	99.3	105.6	92.2
CONSTRUCTION	305.7	343.5	320.4
TOTAL	$2,081.6	$2,341.9	$1,876.9

STATEMENT OF VICTOR STELLO

STATUS OF ROCKY FLATS PLANT

Although support to the nuclear stockpile through non-plutonium processing operations continues, the resumption of plutonium processing activities at Rocky Flats continues to be a major concern this year, as it was last. Plutonium processing activities at the Rocky Flats Plant were curtailed in November 1989 to allow conduct of a semiannual nuclear material inventory. EG&G replaced Rockwell as the operating contractor on January 1, 1990. A wide range of criticisms and concerns, which were indicative of systemic deficiencies in the conduct of overall operations, had been raised by oversight groups and confirmed by EG&G management reviews. It was concluded that troublesome incidents and events could continue to occur unless the underlying causes were identified and corrected. EG&G recommended, and DOE agreed, that the resumption of plutonium processing activities should be delayed to allow EG&G to make needed improvements.

The process of identifying the underlying causes and making changes to correct or eliminate the causes has proved to be more difficult, time consuming, and expensive than originally estimated. After operating for years in relative isolation and secrecy, the Rocky Flats Plant has come under intense scrutiny by both internal and external oversight groups. It became apparent to both EG&G and DOE that practices and conditions which had been considered acceptable for many years were now clearly not acceptable and had to be corrected. For example, efforts to produce adequate operating procedures failed several times before DOE recognized that the basic management and technical expertise needed to develop such procedures did not exist at Rocky Flats. This management deficiency affected nearly every aspect of operations at Rocky Flats. Management changes were made by EG&G during the last quarter of FY 1990 and the beginning of FY 1991 to address these problems. The current EG&G team is much more effective in eliminating these problems.

Significant progress has already been made in development and improvements in operating procedures and documentation, hardware, and personnel. Operating procedures are virtually complete for the first building to undergo resumption; configuration management is proceeding so that as we make improvements to the facilities, the configuration of the safety systems is known and continually controlled to ensure that Operational Safety Requirements are maintained; and numerous safety analysis supplements and administrative procedures have been completed. In the area of hardware improvements, duct remediation is continuing to make progress in ensuring that the removal of material meets the safety criteria established by the Secretary; numerous improvements in safeguards and security are being accomplished; and maintenance, which has been substantially under funded in past years, is progressing such that although there is still significant work to be accomplished, we are making significant progress in the maintenance of safety systems and equipment. Significant personnel improvements have resulted following the change in management. Direct interaction between management and workers is accelerating the required cultural change; training in technical fundamentals and job specifics, together with testing and qualification, are improving; and the addition of shift technical advisors has improved management and staff capability to operate the facility safely.

Because of these improvements, the Department and EG&G believe significant progress has been accomplished in developing the capabilities needed for resumption of plutonium processing activities. To meet the requirements of the President for delivery of weapons to the Department of Defense, we are currently proceeding on a schedule to initiate resumption of the Rocky Flats analytical laboratory (Building 559) in the summer of 1991 and to resume activities in the main plutonium manufacturing facility (Building 707) for fabrication of plutonium pits later in the calendar year. Operations in the four remaining buildings would be phased in between late 1991 and early 1993.

Successful execution of this plan will permit the Department to meet our projected defense mission requirements until replacement facilities become available in the future. It is important to note that resumption of plutonium processing activities is a two year effort (FY 1991 and FY 1992). This effort requires significantly more funding than was appropriated this year, and the recently passed $283 million Supplemental Appropriation for Rocky Flats will allow us to accelerate the rate of implementation of safety improvements and the resumption of plutonium processing activities. I would like to thank the Members of the Committee for their support of this request.

SUMMARY

With the $283 million additional funding, we will be able to speed up our level of activities in support of resumption and meet our obligations to deliver weapons to the Department of Defense starting in FY 1992. It is important to note that the Rocky Flats Plant is the only pit production facility which can meet these weapons requirements.

I want to repeat for the Committee what we have said many times—the resumption of plutonium processing activities at Rocky Flats will not be initiated until all the necessary environmental, safety, health, safeguards, and security requirements are met, and until the Secretary of Energy is personally satisfied that such requirements have been met, and approves resumption at Rocky Flats.

STATEMENT OF VICTOR ALESSI

INTRODUCTION

Mr. Chairman and Members of the Committee, I welcome this opportunity to present to you the activities of the Office of Arms Control, an organizational entity reporting directly to the Assistant Secretary for Defense Programs within the Department of Energy (DOE).

DOE has a significant interest and growing involvement in a variety of current arms control activities. The DOE's interest in arms control has expanded from its traditional interest and expertise in nuclear testing limitations to include the entire range of arms control negotiations and related activities.

MISSION

The Office of Arms Control is responsible for developing and coordinating DOE's positions, policies, plans, and procedures relating to the arms control process, and for verification technology development. Since the establishment of the Office, we have been an active participant during a particularly exciting period of international arms control activity with arms control and related technology activities proceeding at an unprecedented pace. The U.S. is negotiating across, and DOE is involved with, a broad range of arms control including the Strategic Arms Reduction Talks (START), Defense and Space, the Bilateral U.S./Soviet Chemical Weapons Destruction Agreement, the Chemical Weapons Convention (CWC) and the Open Skies initiative, as well as with implementation of the Intermediate-Range Nuclear Forces (INF) Treaty, the Threshold Test Ban and Peaceful Nuclear Explosive Treaties, and Conventional Forces in Europe (CFE) Treaty.

ORGANIZATION

The Office of Arms Control is comprised of two divisions: the Policy and Technical Analysis Division and the Systems and Technology Division. The Policy and Technical Analysis Division is responsible for the development and coordination of DOE positions, policies, plans and procedures relating to arms control matters. It is also responsible for supporting interagency, intragovernmental, and international deliberations, negotiations, and treaty implementation activities. The Systems and Technology Division is responsible for developing an applied technological base including prototype systems which will provide a range of technical capabilities needed to verify compliance with existing and future treaties. The verification technology activities are coordinated with the Departments of State and Defense, the Arms Control and Disarmament Agency, and the Intelligence Community.

Our activities are spread throughout DOE's national laboratory system. While the majority of the funding goes to the weapons laboratories (Sandia, Los Alamos, and Lawrence Livermore) because of the unique character of their nuclear expertise and their extensive experience in developing verification technologies, the other multiprogram DOE laboratories (Pacific Northwest, Idaho National Engineering, Argonne, Oak Ridge and Brookhaven) also conduct R&D for developing arms control verification technologies.

FY 1992 FUNDING REQUEST

The Arms Control Program is funded under the Verification and Control Technology (V&CT) budget. The Arms Control portion of the Verification and Control Technology budget request for fiscal year 1992 is $185.0 million compared to $154.5 million for fiscal year 1991 with most of the growth ($15 million) funding TTBT/PNET implementation. As you are aware these treaties are now in effect.

DETECTION TECHNOLOGY

Under the Detection Technology Program, we have developed, or are developing, monitoring systems and inspection equipment to verify compliance with the Limited Test Ban Treaty (LTBT), Nuclear Non-Proliferation (NPT) Treaty, Threshold Test Ban Treaty (TTBT), Peaceful Nuclear Explosions Treaty (PNET), Intermediate-Range Nuclear Forces Treaty (INF), and Conventional Forces in Europe Treaty (CFE) and the U.S./Soviet bilateral Chemical Weapons Destructions Agreement, as well as the prospective Strategic Arms Reduction Treaty (START), and Chemical Weapons Convention (CWC). In addition, we are also investigating arms control technologies potentially applicable to Short Range Nuclear Forces (SNF) arms control and the Open Skies initiative.

Our verification requirements involve a wide range of capabilities many of which are unique. Some of these capabilities involve new systems drawn from existing technologies. This is particularly true for near-term verification needs. For example, the DOE built new systems for local seismic measurements in order to have the capability to verify the Peaceful Nuclear Explosions Treaty. Similarly the DOE developed a system to distinguish between single and multiple warhead missiles for Use in verifying the INF Treaty, making use of off-the-shelf equipment for detecting neutrons. Other capabilities involve the development of new technologies, many of which require that the state of the art be advanced. For example, the difficult demands of verifying a prospective Chemical Weapons Convention will require technological capabilities that do not now exist. In addition, the DOE attempts to anticipate future arms control initiatives by developing the technologies that will make them effectively verifiable. Much of the technology that will be used in current and near term arms control agreements is the result of long leadtime research and development. The same will be true of future agreements.

We have organized our Detection Technology Program into four functional areas: (1) On-Site Verification; (2) Regional Monitoring; (3) Remote Sensing; and (4) Advanced Concepts/Technology Development.

On-site verification activities are comprised of systems and technologies that are used to monitor treaties with the cooperation of the inspected party. A number of DOE on-site monitoring systems are being used for the Intermediate-Range Nuclear Forces Treaty. Since the enactment of INF, the DOE technical community has further exploited its broad scientific resources to apply technological measurements and methods to verification regimes negotiated or being negotiated for the Threshold Test Ban Treaty, the Peaceful Nuclear Explosions Treaty and the Strategic Arms Reductions Talks.

Regional Monitoring activities include developing seismic verification systems and data processing capabilities to detect, identify, locate and characterize underground nuclear explosions, emphasizing regional rather than teleseismic monitoring.

Remote Sensing activities have been underway for over a quarter of a century. An example of our verification efforts in this area is the satellite instrumentation program for worldwide monitoring of the Limited Test Ban Treaty and the Nuclear Non-Proliferation Treaty. Another element of the Remote Sensing activity is the development of new satellite sensing techniques that cover portions of the electromagnetic spectrum outside of the visible range.

In the Advanced Concepts/Technology Development activity we intend to extend the frontiers of science and technology in ways that may be useful for future verification needs. Under this program, the DOE scientific community is encouraged to invest their imagination and initiative on technical concepts. This is where we test the technical feasibility of new concepts and develop technologies that could improve U.S. monitoring capabilities for existing treaties, or that could be useful in helping to verify future arms control treaties.

It is important to emphasize the versatility and quality of the scientific support we receive from the national laboratories. We consider their applied technical expertise, which has evolved primarily from the nuclear weapons programs at the laboratories, to be a national asset in terms of arms control verification technology development. While we have attempted to maintain a stable level of resource allocations to the laboratories, we have also undertaken a concerted effort, including a five-year planning process, to focus on long range issues which allow us to begin and complete discrete projects in an orderly and efficient manner. We believe that, because of our ability to tap the broad expertise of the national laboratories, we at the DOE's Office of Arms Control have a unique opportunity to apply that expertise to the Nation's arms control treaty verification needs.

For nearer term efforts related to existing treaties or those under negotiation especially, DOE works closely with other agencies with verification technology programs. In addition, DOE is a member of the interagency committee responsible for advising the administration on verification technology. DOE's cooperation and coordination with other agencies involved in arms control enables it to be flexible and responsive in a timely way to new arms control initiatives that may require adjustments and additions to our research programs. In such cases where the verification requirements are better defined and the need is more immediate, we draw upon existing technology and adapting it to meet those requirements.

Since policies may change as a result of public, fiscal, or congressional activities or international events, and since technology development may take up to ten years, we believe it is also prudent to pursue long-term technology development in support of more generic requirements. For this reason we are developing future technologies which are not directly related to current U.S. arms control agreements now being negotiated.

ANALYTICAL SUPPORT

The Analytical Support activities are managed by the Policy and Technical Analysis Division. DOE has a major and increasingly important interest in the pursuit and outcome of ongoing arms control negotiations as well as prospective future arms control activities. This is most evident with regard to nuclear testing and nuclear weapons where DOE and its national laboratories actively participate in the international negotiating process and are directly affected by resulting treaties, protocols, and implementing procedures. In addition, we are involved in analytical support for the full spectrum of arms control treaties being negotiated where it is essential that preparation for negotiations involve thorough analysis of the options available to the U.S., including assessment of their impact on U.S. and allied security postures and of their effective verifiability.

In addition to DOE representation in interagency and international arms control activities, there are other supporting studies and analyses being conducted under this budget category. An effort that illustrates how analytical studies support DOE's participation in arms control negotiations and policy development is the planning and conduct of exercises and mock challenge inspections at sensitive DOE facilities. These exercises advance on-site inspection readiness and planning capabilities, and assist the verification inspection process. We are evaluating the relative merits of alternative approaches to inspections and sharing the results with other departments and agencies. One specific example of analyses underway is our work on what techniques could be used for verification of nuclear warhead dismantlement and special nuclear materials controls.

TREATY IMPLEMENTATION

The DOE has developed the hydrodynamic yield measuring technology (CORRTEX) that will be used for TTBT on-site verification in the Soviet Union and the Local Seismic Network (LSN) for use in on-site verification of the PNET. DOE personnel have been trained to conduct the technical aspects of these verification activities and as directed by the Arms Control Policy Coordinating Committee (PCC) DOE will advise and provide technical assistance to the On-Site Inspection Agency (OSIA) which has the primary responsibility for TTBT/PNET implementation. As directed, the salaries of all DOE personnel, including contractor personnel, involved in the monitoring and inspection of U.S. and Soviet explosions will be borne by DOE. Therefore, the necessary funds for implementation, $15,000,000, are included in this budget request for fiscal year 1992.

PROGRAM DIRECTION

The DOE Verification and Control Technology Program Direction is separated into a Headquarters element which manages and directs the overall DOE Arms Control effort and field elements which are responsible for the implementation of TTBT verification requirements at the Nevada Test Site (NTS) in accordance with federal and state laws. The role of DOE as a full participant in the Arms Control community has required increased staffing to assure interagency coordination and to understand and gauge the impact of negotiations on the DOE mission of developing, testing and producing nuclear weapons.

CAPITAL EQUIPMENT

The capital equipment request is consistent with a research and development program which includes advanced concepts and methods, and development of prototypes.

CONSTRUCTION

Finally, to support various efforts in verification and control technologies, we need a facility that will serve as a focus for related technical activities in national security and arms control. Accordingly, we are requesting $10,000,000 in FY 1992 to continue work begun in FY 1990 on the Center for National Security and Arms Control at Sandia National Laboratories in Albuquerque. This facility will support systems analysis, advanced concepts, ground-based verification, satellite monitoring, intelligence, threat, and countermeasures activities. It is the only dedicated arms control facility in the Defense Complex of DOE.

FUTURE PLANS

The DOE, through the management structure of the Office of Arms Control, and through the technical expertise of the national laboratories, has established a program of systems and technology development for arms control treaty verification. The future activities of these resources will be devoted to continuing the programs of research and development in the current areas of technical interest, while maintaining an emphasis on longer term technology development. This approach will insure that the expertise residing at the national laboratories is most effectively and efficiently utilized. Emphasis will be placed on transfer of developed systems and technologies to the operating or implementing agencies. Finally, we look forward to challenges of continuing development of treaty verification and arms control technologies.

STATEMENT OF WILLIAM L. BARKER

INTRODUCTION

Mr. Chairman and members of the Committee, I am William Barker, Acting Director, Office of Security Affairs (SA). I am pleased to address the Department of Energy's (DOE) Security Affairs programs of Nuclear Safeguards and Security (including Classification and Technology Policy), and Security Investigations, and the FY 1992 budget request required to carry out these programs. Although my testimony addresses the total Nuclear Safeguards and Security budget, I would like to mention that as of April 1, 1991, several elements of this budget are now carried out by other organizations within the Department; i.e., the Technology Transfer portion is now under the Acting Deputy Science and Technology Advisor, Defense Programs; and the Export Control program and International program functions are now under Dr. Victor Alessi, Office of Arms Control, Defense Programs. This change is the result of an organizational realignment which I will address later in this testimony.

Mr. Chairman, since I first appeared before this Committee last year, I am pleased to report that we have made significant progress in many programmatic areas. However, as noted in Secretary Watkins' recent Task Force report on the status of safeguards and security, much remains to be done. As always, I will be pleased to meet with you or Committee members at any time to discuss matters of interest.

SAFEGUARDS AND SECURITY TASK FORCE

As I reported last year, Secretary Watkins tasked Under Secretary John Tuck in April 1989 to conduct a comprehensive assessment of the status of security at DOE facilities. The Under Secretary outlined a four-step plan and formed a task force of uniquely qualified individuals to accomplish the review. The Task Force examined missions, responsibilities, and objectives of Departmental elements in support of security; evaluated previous studies, reviews, and inspections; conducted an intensive analysis of selected facilities and functions; and prepared a comprehensive report.

The Secretary released the Task Force report on the status of Safeguards and Security on December 14, 1990, addressing Safeguards and Security Management, Planning, and Operations. Key elements of the Task Force report call for the realignment of the safeguards and security (S&S) and classification responsibilities from Defense Programs; the establishment of professional development and intern programs; the development of training and equipment standardization programs; the realignment of S&S budget responsibilities; and streamlining the security investigations and long-term planning programs. If I may, Mr. Chairman, I would like to take this opportunity to provide you with some details of this report.

GOALS

The Secretary's Safeguards and Security Task Force was undertaken to provide a status on the safeguards and security program at the DOE and to provide recommended actions that would improve and strengthen the safeguards and security posture in the DOE. Concurrent with the release of the Task Force's Report, Secretary Watkins issued a letter on December 14, 1990, that directed several near- and long-term actions.

The first action directed that the Office of Safeguards and Security and Office of Classification be transferred from Defense Programs. As I just mentioned, this action is underway. As of April 1, 1991, the Office of Safeguards and Security reports directly to the Office of the Under Secretary.

A vigorous mid-to-long-range professional development program, as well as the establishment of an effective long-range intern program for safeguards and security personnel, is being initiated. These programs will be the cornerstone for development of future safeguards and security managers and will provide promotional prerequisites related to future job-related education and training requirements.

Another effort, the standardization and certification of protective force training, is to be accomplished through the Department's Central Training Academy. The Central Training Academy is to report directly to the Office of Safeguards and Security. Also, standardization of equipment and physical security systems is long overdue and must be accomplished in a cost effective and efficient manner.

It is proposed that the Safeguards and Security Program be identified as a separate entity in the Departmental budget, thus helping to improve the management of Safeguards and Security resources throughout the Department. This recommendation is currently being reviewed within the Department and DOE will be working with the Office of Management and Budget and your staffs to address the issues related to this action.

We are planning to streamline several areas of the Safeguards and Security program, including the Master Safeguards and Security Agreements (MSSA's), and the Personnel Security Program. In the area of MSSA's we are currently reviewing the process and will initiate corrective measures over the next couple of months.

In the Personnel Security area, I need not tell you of the constant delays encountered in this process. We have taken several initiatives to improve this program. One initiative is to redefine the categories for the various types of DOE classified information, with a goal of decreasing the number of "Q" clearances. A second initiative is to establish an accelerated access authorization procedure. This proposed procedure is currently being tested at Rocky Flats, and will undergo a complete evaluation before implementation on a DOE-wide basis. Further, we are reviewing Department of Defense clearance procedures for comparability; expediting the transfer process of clearances between offices and contractors, etc. We are working to accomplish these initiatives as expeditiously as possible.

A specific recommendation of the report was to complete the inventory of classified documents and revise document accountability procedures. You can be assured that we are actively working this issue. Another recommendation was to finalize the Strategic Plan for Nuclear Material and Control and Accountability. We are currently working to complete this plan by the end of 1991.

Although the recommendations I have noted today are but a small percentage of the overall recommendations, I believe they are representative of the major undertaking of this Department to ensure a safeguards and security program which is second to none in the Federal Government. I would be pleased to meet with you or your staff to discuss any of these recommendations or any others which are set forth in the Task Force Report.

I would now like to address some of the areas presented in the budget before you today.

MISSION

The Security Affairs programs are the Department's cornerstones in the development, implementation, and oversight of policy, guidelines, and procedures to prevent the theft of nuclear weapons or materials, the sabotage of Departmental facilities, and the compromise of classified information. Further, the program provides an effective technology base for application to Departmental S&S programs; support of international safeguards and physical protection to deter the diversion of nuclear materials and to promote nonproliferation and national security objectives; development and management of the classification and declassification of information; control of proposed exports of nuclear materials technology and equipment; and the implementation of a program to transfer unclassified technology from our defense complex to U.S. industry.

BUDGET

Security Affairs requests $158.6 million for FY 1992. This consists of $96.0 million for Nuclear Safeguards and Security ($8.4 million in operating expenses (exclusive of program direction) for Classification and Technology Policy) and $62.6 million for Security Investigations.

NUCLEAR SAFEGUARDS AND SECURITY PROGRAM ACTIVITIES

Mr. Chairman, the Nuclear Safeguards and Security Program budget request for FY 1992 is $96.0 million. Operating expenses require $88.7 million (the $8.4 million for Classification and Technology Policy is included in this requirement), capital equipment $5.3 million, and general plant project construction of $2.0 million. I will address the following basic elements: S&S operations, technology development, international safeguards, and classification and technology policy.

SAFEGUARDS AND SECURITY OPERATIONS

The Safeguards and Security Operational Support activity request for FY 1992 is $38.3 million. This budget request includes such activities as the New Brunswick Laboratory (NBL) ($3.8 million); the Nuclear Materials Management and Safeguards System (NMMSS) ($3.1 million); The Central Training Academy (CTA) ($10.1 million); Technical Security Countermeasures (TSCM) program ($1.5 million); and a number of Headquarters administered contracts, as well as guidance and assistance to DOE field operations for safeguards and security program improvements ($19.8 million).

The New Brunswick Laboratory, Argonne, Illinois, is the national standards laboratory for nuclear materials measurements and serves as the technical extension of the Office of Safeguards and Security (OSS) in the areas of measurement science, calibration, and evaluation of Materials Control and Accounting (MC&A) practices within the DOE complex. NBL's functions include: maintaining and improving an internationally-compatible reference base for nuclear material measurements; assessing measurement technology in support of the DOE nuclear fuel cycle and weapons production activities; and developing, certifying, and distributing reference materials for calibration and standardization of nuclear material measurements. In its unique role as a government-owned, government-operated laboratory, NBL also provides on-sight technical assistance to Headquarters in the area of policy review and implementation.

In cooperation with the Nuclear Regulatory Commission (NRC), we will continue at Oak Ridge, Tennessee, to operate the NMMSS, the nation's single nuclear material database. The tracking of US-origin nuclear material involving DOE contractors, NRC licensees, and foreign trading partners is integral to the mission for control of special nuclear material. NMMSS maintains information needed by facilities to verify the shipment and receipt of nuclear materials to reconcile nuclear material inventories at DOE facilities.

The CTA at Albuquerque, NM is the focal point for all safeguards and security training and dissemination of training principles. Training at the CTA includes physical security, protective force operations, security education, computer security, and MC&A. The CTA will provide training oversight of the safeguards and security training programs conducted at the DOE field operations offices. The standardization of training has greatly facilitated the development of a complex-wide protective force that is second to none and more than able to counter threats against the Department's nuclear materials and facilities. There has been a dramatic increase in classes, from three courses offered in 1984 to more than 60 courses projected for FY 1992. CTA is nationally recognized as a valuable training asset. We are proud of the advances made at CTA and will continue these improvements in FY 1992.

The major portion of the funding increase will maintain existing facilities which, in some cases, are substandard. In addition, the Department is requesting General Plant Project funds of $2 million in FY 1992 for needed facility upgrades.

The DOE Technical Surveillance Countermeasures program protects against the theft of classified information by technical means. Modern intelligence collection utilizes equipment and devices incorporating state-of-the-art technology to accomplish technical penetrations of targeted areas. The detection of clandestinely installed devices is extremely difficult, and countermeasures are achieved only with highly trained personnel using specialized techniques and equipment.

A program to certify the competency of DOE TSCM investigators has been instituted, and is in place, for those who currently perform services for the Department. These efforts in training and certification continue to improve the overall technical security posture of the Department.

As stated last year, we came to realize that a more effective S&S planning process was needed to consider long-term programmatic requirements and trends, identify strategic policy issues affecting the outyears, and identify actions which address concerns and vulnerabilities of the Department's critical facilities and assets. A corporate planning approach has been developed with Master Safeguards and Security Agreements (MSSAs) as the base planning documents. In support of the MSSA process, the standardization of vulnerability assessments within the Department has led to the development and use of sophisticated, user-oriented computer models as tools for aiding in assessing the effectiveness of our facility protection programs. The Secretary's task force has determined, and we agree fully, that the time required to complete MSSAs, and the associated costs, must be reduced. To accomplish this, we are developing guidance that should streamline the process.

I am pleased to announce some progress on the DOE's airspace initiative. The Federal Aviation Administration (FAA) and DOE are working together toward a goal of establishing new or expanded airspace prohibitions over nine additional facilities. FAA and DOE are proceeding with permanent rulemaking to accomplish this goal. As an integral part of the process, we held informal public meetings at nine locations this past spring. The Department continues to make every effort to be responsive to all public concerns. We have based our altitude and boundary proposals on extensive discussions with our field security staffs and have requested minimum altitudes consistent with our security and safety needs. We have revised our time requirements to have these restrictions in place from the Fall 1991 to the first half of 1992.

We continue to improve security policies, practices, and procedures for classified document control, albeit not as quickly as we would like. Initiatives, such as modified document accountability based on 100 percent document inventory and a three-tiered document access control program are underway to improve the classified document control and accountability program. The comprehensive secret document inventory is near completion. An Information Security umbrella order is under development which integrates various aspects of the control of classified information to provide a comprehensive information security program.

Each year the national laboratories host many visitors and assignees from foreign countries under agreements for cooperation or on a scientist-to-scientist basis. These interactions are integral to the scientific process, but must be conducted on an appropriately controlled basis and then according to sound security plans. The potential for inadvertent disclosure of classified or sensitive information, or the use of such visits for the intentional gathering of such information, is a concern. To counter this concern, we have successfully implemented a Departmental Order designed to improve physical and technology security and security awareness associated with the visits and assignments program. I would like to add, Mr. Chairman, that we are not completely satisfied. There is more to be accomplished. However, we are confident that our continuing improvements in the management of the foreign visits and assignments program at all DOE facilities will indicate that our objectives are being met.

TECHNOLOGY AND SYSTEMS DEVELOPMENT

The Technology and Systems Development activity request for FY 1992 is $26.7 million. The Technology and Systems Development program, conducted at the national laboratories under Headquarters direction, is an integral part of Nuclear Safeguards and Security and provides the technology base for developing new systems required to sustain a viable safeguards and security program. The program's basic mission is the development and application of state-of-the-art technologies for the protection of DOE sensitive facilities, SNM, and classified matter. The Department's Technology Development Program contributes to cost-effectiveness in all areas by leveraging our personnel resources and improving the operational efficiency of S&S systems. Many benefits are realized through the use of technology to reduce manpower levels and through the development of standardized systems. The use of new technologies to facilitate engineering design and specification for construction and equipment is also reducing our S&S costs.

Fiscal constraints on the Nuclear Safeguards and Security Program continue to restrain development of the technology base and will limit the technology available to improve our protection posture. The continuing need for state-of-the-art S&S technologies is especially relevant to Departmental initiatives for modernization and plans for reconfiguration of the complex.

Identifying and addressing the technology development needs of the DOE community are important planning factors. Proposed projects are evaluated based on their potential to solve existing and future problems. This provides emphasis for projects that offer potential, cost-effective solutions to known safeguards and security problems at multiple facilities. In addition to solving problems and improving S&S capabilities, all proposed technology development projects are evaluated for their potential to reduce the operational outlay ("crosscut") estimates for S&S. This provides incentive and leverage to improve both effectiveness and efficiency of the overall S&S mission. Close coordination with outlay programs, such as weapons, materials production, etc., is vital to accomplish this goal.

Disseminating the S&S technology developed for the DOE complex to other Government agencies is also a high priority. We consider our DOE S&S technology development program a unique national resource in assuring an awareness of technologies developed not only within the Department, but also in assuring awareness and coordination of technology development activities with other federal agencies. Exchange of information about S&S technology is conducted through the dissemination of technical reports and manuals to appropriate audiences and end users and the conduct of training courses and workshops. We continue to emphasize close interagency sharing and coordination to minimize costs and reduce redundancies.

The FY 1992 request for the DOE Classified Computer Security program is $3.3 million, and is provided through the Technology and Systems Development Program. Significant activities of the classified computer security program include the Center of Excellence for Computer Security at the Los Alamos National Laboratory and the Computer Incident Advisory Capability at Lawrence Livermore National Laboratory. The Center provides support for the education and training of computer security personnel. It also provides field support and conducts technology development for computer security. The Lawrence Livermore National Laboratory provides training, support, and assistance to DOE locations in the detection, prevention and elimination of computer viruses and other forms of computer intrusion and develops computer products for the enhancement of computer security in the Department. Additional computer security development work is sponsored at Oak Ridge National Laboratory where products to support assurance of secure computer software are being developed.

INTERNATIONAL SAFEGUARDS

Our international safeguards program request for FY 1992 is $5.3 million. This program supports U.S. nonproliferation and national security objectives, as required by the Atomic Energy Act of 1954, the Nuclear Non-Proliferation Act (NNPA) of 1978, the Omnibus Diplomatic Security and Anti-Terrorism Act of 1986, and implementing Executive Orders and Presidential directives. The primary objectives are to provide a sound technical basis for U.S. policies and to strengthen international safeguards and physical protection through technical support to the International Atomic Energy Agency (IAEA) and cooperative efforts with other nations. Initiatives to implement these requirements are based on the DOE/OSS long-range technology development program for international safeguards and bilateral exchanges of international safeguards and physical protection technology with other nations and organizations.

We are actively pursuing bilateral technical exchanges on physical protection technology, technology development for new and improved systems for IAEA safeguards and advanced safeguards technologies and procedures to improve the efficiency of IAEA safeguards inspectors. Additionally, we are conducting international training courses on international safeguards at the national level for foreign nationals.

CLASSIFICATION AND TECHNOLOGY POLICY

The FY 1992 request for the Classification and Technology Policy program, which is incorporated in the Nuclear Safeguards and Security program budget, is $8.4 million, exclusive of program direction. In FY 1992, we will continue to manage Defense Programs' technology transfer activities. Funding for these activities, in the amount of $32 million, has been requested in the Weapons Research and Development budget.

The Classification and Technology Policy mission is to develop and implement policy and procedures to identify classified and unclassified sensitive information critical to the national security, control nuclear-related exports, and develop and implement the technology transfer policies and programs for Defense Programs. Our goals are to utilize the technologies, capabilities, and expertise resident in Defense Programs to promote the national security, enhance U.S. industrial competitiveness, and allow for industry interactions that foster increased technological vigor within the complex. We will achieve these goals in concert with the weapons development mission and the protection of sensitive technologies and classified information.

The FY 1992 request will continue classification activities in program areas involving sensitive technologies, such as Inertial confinement fusion, nuclear weapons nonproliferation, etc.; classification assistance to the NRC and the Department of State in matters pertaining to commercial uranium enrichment; implementation of automated systems to improve the effectiveness and efficiency of the classification program; education and training; classification appraisal program; and document review activities. By the end of FY 1991, we will have completed a comprehensive classification policy study that was undertaken to determine whether current DOE classification policies and procedures are adequate for the coming decade, considering the significant world changes that have occurred since the Atomic Energy Act was established in 1946. FY 1992 activities will focus on implementing the study's recommendations (e.g., legislative changes, policy revisions, declassifications, etc.).

Defense Programs has played a major role in developing and implementing nuclear export control policy to ensure compliance with U.S. national security and nuclear nonproliferation policies. We continue to pursue measures to control technologies which could assist potential proliferants in the design or production of nuclear explosive devices. The Department has aggressively led a significant effort to create an international nuclear dual-use export control regime over items that have weapons as well as commercial applications. This effort is particularly timely in view of the need to inhibit exports to countries such as Iraq. In addition, events brought about by the political transition occurring in eastern Europe and the Soviet Union have increased pressure on the U.S. Government to identify those technologies and commodities which continue to pose a national security concern. As a consequence, we are involved in a major effort to revise international controls in the Coordinating Committee on Multilateral Export Controls (COCOM) to ensure international commerce will not undermine U.S. national security and nonproliferation interests. We continue to exercise a leadership role by providing technical and policy expertise in support of the negotiation of major changes to existing international controls over nuclear fuel cycle components subject to international safeguards under the Nuclear Nonproliferation Treaty Exporters Group.

I would also like to emphasize our strong commitment to technology transfer in Defense Programs. The Secretary has singled out the technology transfer program as a high priority of the Department, and in Defense Programs we have set the course for an aggressive program in FY 1992 and beyond.

As you know, the enactment of the National Competitiveness Technology Transfer Act of 1989 and the amendment to the Atomic Energy Act has allowed us to embark on a vigorous program of technology transfer in Defense Programs. The advanced technology and capabilities resident in the Defense Programs laboratories and production plants are significant resources that can now be directed towards strengthening the economic competitiveness of our country in addition to protecting our national security.

During 1990, we worked with other elements of the Department to develop guidelines and policies for technology transfer. Necessary contract modifications have been negotiated and signed by the major Defense Programs laboratories, and several cooperative research and development agreements are in process. We are now turning our emphasis to the initiation of cooperative ventures with private sector partners. We have begun several projects in FY 1991 in areas of technology ranging from precision machining and manufacturing, lasers, computers, and microelectronics to advanced technical training. We are continuing the Specialty Metals Processing Consortium (SMPC) to assist in providing reliable domestic suppliers for weapons program materials and for maintaining state-of-the-art technologies in critical Defense Programs areas, as well as potential commercial applications. The Advanced Manufacturing Initiative (AMI), underway at our major defense complex facilities, encompasses Defense Programs manufacturing-related activities and is being conducted in cooperation with the National Center for Manufacturing Sciences and other private sector partners. Our strategy is to collaborate with U.S. industry to transfer technology in critical areas to strengthen our economic competitiveness to promote reliable domestic suppliers for weapons program needs.

In FY 1992 we will continue to focus our efforts on implementing additional technical programs in cooperation with U.S. industry. Our program growth will allow for enhancement of additional areas of technology critical to the weapons program; progression of activities initiated in FY 1990 and FY 1991, such as the SMPC and AMI programs; and the initiation of new technology transfer program development activities to encourage more effective interactions with U.S. industry, nationwide outreach and "inreach" programs, and education and training initiatives which are also essential elements of the program in FY 1992. The key to our success in working with the private sector relies on our credibility as a dependable partner. As our collaborative efforts proceed, we must be in a position to commit the needed resources to support the continuing growth of this program.

SECURITY INVESTIGATIONS

The FY 1992 request for personnel security investigations is $62.6 million. Security investigations are required by the Atomic Energy Act of 1954, as amended, and Executive Orders 10450 and 10865. The Department is mandated to use the Federal Bureau of Investigations and Office of Personnel Management (OPM) to conduct clearance investigations. The FY 1992 budget provides for 11,179 initial full-field investigations, 29,361 National Agency Checks, and 21,530 reinvestigations; and continued training for personnel security specialists.

In 1986, we began a major initiative to reduce the numbers and levels of clearances, resulting in a 15-percent reduction of clearances from approximately 209,000 to the current level of about 178,100. We have assured continued emphasis on this aspect of the program by requiring annual reviews and recertification of clearances for DOE and contractor employees, and other agency employees and contractors.

Mr. Chairman, let me emphasize the Department's continued commitment to reducing the security reinvestigations backlog. We have reduced the number of backlog reinvestigations from approximately 132,000 in 1985 to approximately 27,000 at the end of FY 1991. The elimination of this backlog is essential so that we can ensure the integrity of our work force by maintaining current background data on our employees and removing individuals with derogatory information in their background from sensitive programs. We have been working with senior officials of the OPM to insure that OPM continues to meet DOE needs for reducing the reinvestigations backlog. It Is clear that OPM intends to make every possible effort to meet our needs.

One key component of our efforts to address the potential insider threat is the implementation of the Department-wide Personnel Security Assurance Program (PSAP) which will systematically monitor the reliability of selected DOE and contractor personnel. The PSAP, as we mentioned last year, is a special access authorization (security clearance) program for personnel who protect, transport, or have direct access to significant quantities of special nuclear material; operate nuclear material production reactors; or could cause grave damage to nuclear weapons production with the potential for significant impact on national security. The PSAP, signed by the Secretary and sent to the Office of Management and Budget for review pending publication in The Federal Register, includes an annual supervisory review; medical evaluation, which includes a physical examination, an alcohol dependence/alcohol abuse evaluation, and a psychological assessment; management review, including drug testing; and security review. A training program, which has been field-tested, will be implemented for individuals included in the program.

We also have two additional personnel security clearance initiatives that we expect to implement during FY 1992: (1) Accelerated Access Authorization (AAA) proposes the establishment of a procedure whereby persons requiring "Q" clearances for the first time might be employed in classified or nuclear material-related activities in advance of the completion of time-consuming investigations (83 days for AAA versus 310 days currently) and (2) the Tiered Access Program is a three-tiered approach to redefine the categories for the various types of DOE classified information which dictate levels of required security clearances. This initiative will increase categories of access for "L" clearances and decrease the access requiring "Q" clearances.

S&S CROSSCUT ESTIMATE

The Department's line item programs fund S&S activities at the Department's field facilities. Total S&S funding is identified in the Department's crosscut estimate, which is a summation of S&S items in all the Department's program requests, including the OSS. The Department's total crosscut estimate for FY 1992 is $1.1 billion, compared to $1.0 billion in FY 1991. The Defense Programs' portion is $908 million in FY 1992, compared to $846 million in FY 1991.

As the Departmental coordinator, Security Affairs has a broad range of responsibilities for crosscutting activities which include ensuring that program budget submissions properly reflect S&S considerations. We validate the need for S&S improvements, evaluate proposed upgrade designs for adequacy, and verify the performance of the upgrades once they are in place. This process is critical if we are to assure continued progress in upgrading protection systems at our sensitive facilities. For example, we have been engaged in a massive effort to enhance the safeguards and security posture at Rocky Flats on a very compressed schedule. Physical security upgrades and enhanced nuclear materials control measures are being made to ensure a high confidence that nuclear materials are satisfactorily protected. Federal manpower resources, contractor support and national laboratory experts are all focused on this activity which is essential to the resumption of operations at this essential facility.

Significant progress continues to be made toward increasing the level of protection of our facilities and the protection of DOE assets. Our ability to mitigate the potential outsider threat remains at an acceptable level at our nuclear weapons facilities. Sustained management attention to physical security upgrades and the strengthening of DOE's protective forces contributed to this accomplishment. The Department's protective forces are better equipped and better trained and more capable of protecting our national security assets. Our fabric for deterrence—access controls, barriers, hardened sites, and security response teams capabilities remains highly effective.

Current and future emphasis is required to ensure adequate protection against the potential insider threat. Although progress is being made against the insider threat, it is at a much slower pace than we would like. Secretary Watkins' Safeguards and Security Task Force confirmed the need for additional emphasis to mitigate the insider threat.

A number of actions were initiated to address potential acts of theft of SNM by insiders. The Department implemented performance-oriented requirements to allow more cost-effective expenditures of resources for material control and accountability (MC&A) systems. Improvements in MC&A practices continue to be emphasized at key sites. The S&S technology development program continues to produce advances such as better site portal monitors for detecting removal of SNM, and better measurement equipment and data systems designed to increase the assurance that nuclear material accounting records are not falsified by exploiting measurement uncertainties or accounting records.

Measurement systems installed in-line at many facilities permit more timely and accurate determination of material in process. These improvements are designed to provide a defense-in-depth approach. We have also organized teams of experts to investigate and determine causes of incidents involving the MC&A of SNM.

CONCLUSION

Mr. Chairman, members of the Committee, let me conclude today by stating that the Department continues its commitment to excellence in S&S. The Department's ability to mitigate the potential outsider is at an acceptable level at our nuclear weapons facilities. We recognize that much remains to be done to mitigate the potential insider threat, and we are continuing to take actions to correct this problem. We will continue to work with the Congress to ensure that the protection of the Department's national security assets are given the highest priority.

STATEMENT OF ROBERT W. DANIEL, JR.

INTRODUCTION

Mr. Chairman and members of the subcommittee, I am Robert W. Daniel, Jr., Director of the Office of Intelligence for the Department of Energy (DOE). It is my pleasure to provide this statement today regarding the Department's intelligence programs with particular focus on the FY 1992 budget request.

The Department faces daily challenges of a global nature spanning the spectrum from national defense and energy security issues to issues involving nuclear reactor safety and nuclear waste disposal. To meet these challenges, the Department's intelligence element was reorganized in April of 1990 with an expanded mission to provide special support over a broader range of issues. The primary mission of the reorganized element is to ensure that the intelligence information requirements of the Secretary and senior DOE policymakers are met. In addition, the Office of Intelligence ensures that DOE's technical, analytical, and research expertise is made available to the Intelligence Community in accordance with Executive Order 12333, "United States Intelligence Activities." The Office of Intelligence also provides threat assessment and counterintelligence support to DOE Headquarters and field operations.

While the Office of Intelligence is a separate and distinct program element,

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a member organization of the Intelligence Community in accordance with guidance provided by the Director of Central Intelligence.

The Department traces its presence in the Intelligence Community to July 1947 when the National Intelligence Authority recognized that the Atomic Energy Commission (AEC) had an appropriate foreign intelligence role and authorized AEC representation on the Intelligence Advisory Board. Following enactment of the National Security Act of 1947, the AEC's intelligence role was affirmed by National Security Council Intelligence Directive No. 1 of December 12, 1947.

The Energy Reorganization Act of 1974 transferred the AEC's intelligence responsibilities to the Energy Research and Development Administration and the Department of Energy Organization Act of 1977 transferred them to DOE.

The nature and scope of DOE intelligence activities are influenced by a variety of international events and trends, particularly in the areas of nuclear and nonnuclear energy policy and technology, strategic petroleum reserves, defense policy, and nuclear weapons technology developments. In addition, the nature and scope of the Department's intelligence activities continue to be influenced by intelligence requirements *Deleted*

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PROGRAM ORGANIZATION AND ACTIVITIES

The Office of Intelligence reports directly to the Office of the Secretary and provides specially tailored support over a broad spectrum of issues and programmatic areas. In addition, the Office of Intelligence staff represent the Department through participation on various national-level groups, *Deleted* The Department's intelligence and intelligence-related activities are accomplished by three primary organizational elements-- the Office of Foreign Intelligence, the Office of Threat Assessment, and the Office of Counterintelligence.

FOREIGN INTELLIGENCE ACTIVITIES

During a period of rapid change in National security perspectives, foreign intelligence has become more important in the Department's policy and decision making. DOE is involved in many issues that have complex implications. Timely and accurate intelligence reporting is essential to clarifying these implications.

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In addition to the above activities, substantial efforts are carried out to provide the Secretary, senior DOE management and appropriate staff pertinent information on worldwide energy developments. These activities focus on integrated, all-source intelligence analysis of the international developments that could affect the overall U.S. energy posture and the Strategic Petroleum

Reserve. Special analyses provide for DOE needs for information on the prospects for disruption of energy supplies due to worldwide political, economic, and social instabilities. The energy resources intelligence activities also include analysis of overall energy balances within the Soviet Union and other nations, focusing on total energy needs that might influence global supply and demand. Information on plans, capabilities, and deficiencies of advanced countries to limit economic damage from petroleum supply disruption is also provided to support the formulation of DOE policies and plans.

THREAT ASSESSMENT ACTIVITIES

The Office of Threat Assessment (OTA) is responsible for providing the Secretary and senior DOE officials with timely analysis of potential and actual threats to DOE facilities and interests, analysis of international terrorist activities that could affect DOE interests, and information on terrorist and other subnational threats to international energy systems.

OTA also has several other responsibilities. For domestic intelligence and law enforcement personnel, OTA conducts threat assessment training and awareness seminars regarding nuclear threats. In support of the law enforcement and intelligence communities, OTA assesses subnational nuclear threats and nuclear material black market transactions.

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The OTA personnel brief key senior DOE officials regularly on terrorist threat-related intelligence.

OTA also directs the Special Technologies Program.

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COUNTERINTELLIGENCE ACTIVITIES

The primary objectives of the DOE counterintelligence program are to identify, neutralize and prevent foreign intelligence service actions to illegally acquire classified or sensitive DOE information. Deleted

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The Office of Counterintelligence (OCI) program consists of three separate elements-- policy and oversight, field operations support, and Headquarters operations.

OCI is responsible for development of the Department's counterintelligence policy and ensuring its implementation in the field.

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Therefore, DOE maintains an active and aggressive program to protect classified departmental assets and information.

SIGNIFICANT ACCOMPLISHMENTS

During FY 1990 the Department contributed significantly to National intelligence activities over a broad range of areas and made significant strides in accomplishing the goals and objectives set for its Departmental intelligence activities.

The Department provided support to the Nation's top intelligence priorities as identified by the President's Foreign Intelligence Priorities Committee.

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Specific accomplishments were achieved

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During FY 1990, at Admiral Watkins' initiative, a National Intelligence Estimate was prepared in collaboration with the Intelligence Community. The estimate, titled "The Global Energy Environment Into the Next Century," supported the international context of the President's National Energy Strategy.

In addition to the above accomplishments, significant strides were made toward Departmental management goals and objectives. Through the reorganization of the intelligence component, more efficient use of intelligence resources in the conduct of daily current intelligence activities was realized. Emphasis was placed on strengthening the ties between the Headquarters and Field intelligence elements, thereby harnessing the full intelligence resources at the Department's disposal in support of Departmental and national initiatives.

The Department continued the development of the Counterintelligence Program.

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Through its Office of Threat Assessment, the Department provided technical support to the FBI, Customs, and other government agencies on assessment of nuclear threats and black market activities involving special nuclear materials. Special assessments were undertaken of the potential threat to the Strategic Petroleum Reserve and the Trans-Alaska Pipeline.

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In FY 1991 the Department will continue to make significant contributions to the ongoing efforts outlined above. In addition to enhancing these activities, the Intelligence Office will participate, with other DOE elements,

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in the energy security arena to provide more focus on U.S. energy-related economic competitiveness in global markets.

SUPPORT TO DESERT STORM

In addition to ongoing activities, the Office of Intelligence is involved in providing support to Desert Storm. Special analysis and reporting of developments in the Persian Gulf crisis have supported the Department's efforts to deter the potential for panic in international energy and financial markets emanating from false reports of adverse hostile impacts on energy production, marketing and pricing.

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In addition, Office of Intelligence staff prepare daily briefings, assessments and situation reports for the Secretary and key policy makers.

FY 1992 FUNDING REQUEST

FY 1991/1992 Funding Profile
(dollars in thousands)

Activity	FY 1991	FY 1992	Change

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The Energy Security program supports DOE's needs for information on the prospects of energy supply disruption due to worldwide political, economic, and social instabilities.

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THREAT ASSESSMENTS

The increased funding request for FY 1992 provides $565,000 to cover inflation and conduct additional Threat Assessment activities. The request will provide for continued development of the Domestic Regional Threat Assessment Program. The program is currently limited in scope and does not offer comprehensive local/regional threat assessments for determining impacts on DOE facilities and activities.

CONCLUSION

The Department's FY 1992 budget request for intelligence and intelligence-related activities is in direct support of high level Departmental interests and Intelligence Community requirements.

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With the resources contained in this request, I am confident that the Department can fulfill its intelligence responsibilities and satisfy the high priority requirements of the Intelligence Community. It has been my pleasure to provide to you this overview of the DOE intelligence programs and to outline our FY 1992 budget request. If I can be of further assistance in providing additional details on the DOE intelligence programs, I will be pleased to meet with you or your appropriate staff personnel at your convenience.

ADDITIONAL PREPARED QUESTIONS SUBMITTED FOR THE RECORD

Senator DOMENICI. As the chaiman indicated, there are additional questions for the subcommittee and I have some as well.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR JOHNSTON

Weapons Research and Development

Funding and employment related to the technology base of the weapons labs continues a downward trend.

Question: What accounts for the continued reduction in both funding and employment levels?

Answer: The continued reduction follows from the combined pressures of reduced funding available for nuclear Weapons Research, Development and Testing (WRD&T), constant requirements to support the existing and near-term stockpile, and increased requirements for dealing with a host of restoration, security, environmental, health, and safety (ES&H) issues.

Question: Is the level of resources requested in the 1992 budget request adequate to address priority activities foreseen at this time?

Answer: Yes, but this level does erode the WRD&T technology base and results in stretching out further several of the ES&H activities which are planned.

Question: What is the rationale behind the decision to give such activities as Technology Commercialization and Inertial Fusion a higher funding priority than the weapons research, development, and testing technology base program?

Answer: The Weapons Research, Development and Testing technology base programs are part of a much larger program. The laboratories are multi-purpose institutions and carry out a large number of missions ranging from human genome and superconductivity research to development of massively parallel computational techniques, in addition to their basic nuclear weapons mission.

Both technology commercialization and inertial fusion are viewed as activities that not only have their own potential payoff, but also support and extend the basic nuclear weapons mission. For this reason, they are supported as an overall part of the program in a manner that balances various programmatic needs against available resources.

Question: Funding for Technology Commercialization goes from $20 million in fiscal year 1991 to $32 million in 1992, a 60% increase in just one year. What is the justification for such a large increase in one year? Can this program assimilate such a large increase without waste and inefficient or ineffective use of the resources?

Answer: Technology Commercialization within Defense Programs is a new initiative. Both the laboratories and private sector businesses are just becoming aware of the potential and importance of technology transfer. In FY 1991, the Technology Commercialization

Initiative issued a call for laboratory/industry proposals which generated more interest and support from the private sector than the budget could support. The willingness of private sector partners to match Government dollars demonstrates their confidence in the program.

We will be funding about 35 of these proposals in FY 1991, almost all of which are multiyear projects that will require FY 1992 funding. The FY 1992 call for proposals has just been issued, and based on the increasing maturity of the program, we expect a greater response than in the previous year. Consequently, even with the proposed budget increase, it will not be possible to support all of the high quality proposals that we expect to receive.

All proposals are reviewed by at least two independent technical review panels. These reviews assure that only proposals that meet all program requirements, including benefits to Defense Programs and industry, are considered for funding. These reviews, coupled with the requirement for private sector cost-sharing, provide assurance that program resources will be used effectively.

Technology transfer leverages government dollars with private sector dollars to fulfill a common need. This program brings private sector expertise and private sector dollars into government laboratories.

Question: How does the technology commercialization program benefit the weapons program?

Answer: The Technology Commercialization Initiative benefits the weapons program in a number of ways. All projects must be in areas of technology which are related to the weapons program mission. Selection of projects is coordinated with the Office of Military Applications to assure that this condition is satisfied. The leveraging of Defense Programs research and development funds with private sector funds contributes to the maintenance of a stronger technical base in the laboratories to meet future national security needs than would be possible with just Defense Programs (DP) funding. The laboratories are also strengthened through their increased exposure to the ideas and capabilities existing in the private sector. In addition, the program helps to create or maintain a viable domestic supplier base for critical DP's and Department of Defense needs. This will become even more important as the Department moves forward with its effort to upgrade and modernize the nuclear weapons complex and privatize the production of a greater proportion of nonnuclear components.

Nuclear Weapon Safety

DOE and DOD continue to give very high priority to modernizing the SRAM A (W-69) warhead which has the potential for burn and/or detonation during an aircraft accident or fire. The result is dispersal of plutonium over a wide area.

Testimony at last years hearing indicated a 1 year slip in the delivery of the missile system because of development problems, and concern over constraints in DOE's production complex (restart of Rocky Flats).

Question: Does the budget contain sufficient funding to maintain the high priority status of this weapons safety work?

Answer: Modernizing the SRAM A (W-69) with modern nuclear detonation and plutonium dispersal safety features would be the equivalent of developing a new warhead. The DOD has addressed the primary safety concern by removing the SRAM A from active alert. The long term solution will be achieved by replacing the SRAM A with the SRAM II (W-89), which includes insensitive high explosive and a fire resistant pit. There is sufficient funding for the SRAM II program.

To implement some of the Drell Panel's recommendations for incorporating modern safety technology into the stockpile requires reopening of the Rocky Flats plant. The funding for addressing the facility safety and environmental issues is central to this goal. Another important factor in incorporating this technology would be an adequately funded nuclear test program. The Drell Panel made two other points which have an impact on funding. First, the laboratories must have the resources made available to develop the data bases for determining the safety benefit of design features and design options. Second, to provide intrinsically safe weapons in the future requires an investment in exploratory research.

Question: Is everything being done that can or should be done in fiscal year 1992?

Answer: The President's budget is adequate to address the highest priority concerns.

Question: Has there been any change in either the warhead or missile system delivery schedule since last year?

Answer: The SRAM II missile delivery system has slipped due to a reevaluation of the program schedule by the Air Force. The Air Force schedule indicates that the Department of Energy (DOE) is to provide first assets delivered (FAD) in the first quarter of FY 1996. DOE is making a commensurate adjustment to its production schedule to remain in step with this Air Force schedule change.

Question: Update the Committee on the status of the technical problems which caused last years schedule slip.

Answer: There are no technical problems with the W89 warhead for the SRAM II that caused schedule adjustments. The Department of Energy adjustment in production schedule was a direct result of the slip in the Air Force schedule caused by the missile motor production difficulties.

Question: How could the operational status of Rocky Flats impact the ability of DOE to address this weapons safety issue?

Answer: The Department of Energy (DOE) has placed high priority on modernizing or replacing the W69 with a warhead that incorporates all of the modern safety features. A cost tradeoff study performed while the W89 was in Phase 2 development indicated that it was more effective to replace the W69 warhead on SRAM A with the new W89 warhead, rather than use a Stockpile Improvement Program (SIP) to make safety changes in the W69. Congressional appropriation language mandated that the W89 warhead be compatible with the SRAM A missile. [DELETED]

Question: Are you constrained by budgetary considerations from meeting required operational schedules?

Answer: The FY 1992 budget request includes adequate funding to meet schedules for the W89 warhead for SRAM II, approved in the 1991-1996 Nuclear Weapons Stockpile Memorandum.

Question: What is the status of the Trident warhead safety issue?

Answer: We still view W88/Trident-II system as safe. Nevertheless, the Navy implemented Drell Panel recommendations to change Trident-II missile handling procedures, and the Department of Energy continues to improve the three-dimensional computer codes to predict warhead behavior in abnormal environments. The W88/Trident-II system will be included in a Special Stockpile Improvement Review undertaken by the Nuclear Weapons Council.

Nuclear Directed Weapons

Last year Congress shifted the Nuclear Directed Energy Weapons (NDEW) activities under the core research and development weapons programs and appropriated $90.6 million under operating expenses.

Question: Update the Committee on DOE's current activities and what the Department plans for NDEW activities in 1992.

Answer: In FY 1991, the Department of Energy (DOE) continues to do threat assessment research on x-ray laser (XRL), nuclear explosive driven optical frequency laser (OFL), hypervelocity projectile (HVP), and nuclear reactor driven OFL concepts. The XRL research centers on preparation for an underground nuclear test [DELETED]

The reactor driven OFL work continues to investigate the physics issues and technologies related to high-power reactor pumped lasers, including energy extraction and beam quality issues.

In FY 1992, it is expected that the basic threat assessment research on the XRL, HVP, and reactor driven OFL concepts will continue, although at a lower level due to reduced funding. The research on the nuclear explosive driven OFL is expected to be significantly scaled back or possibly eliminated to fund higher priority programs. The only underground nuclear test planned for Nuclear Directed Energy Weapons (NDEW) concepts in FY 1992 is an XRL test [DELETED]

Question: What funding levels are being requested for both DOE and DOD for fiscal year 1992 and how does that compare to the 1991 funding levels?

Answer: In FY 1991 the Congress deleted Nuclear Directed Energy Weapons (NDEW) as a separate funding line in the Department of Energy (DOE) budget, integrating the appropriated funds into the Core Weapons Research and Development programs. Thus, no separate NDEW program currently exists. However, DOE estimates that about $84 million in fiscal year 1992 will be needed to support the threat assessment research related to NDEW concepts. This level of funding compares to the $90.7 million appropriated in FY 1991 by Congress for the NDEW work. In addition, the Strategic Defense Initiative Organization (SDIO) provided $8.8 million to the DOE on a Military Interdepartmental Purchase Request (MIPR) to directly support the NDEW threat assessment research on the x-ray laser concept. SDIO has thus far not provided an estimate of Department of Defense funding for NDEW threat assessment for FY 1992.

Question: How much funding was transferred to DOE by DOD for SDI-related work in 1990 and 1991, and what is planned for 1992 and 1993?

Answer: The Strategic Defense Initiative Organization (SDIO) has provided $11 million in FY 1990 and $8.8 million in FY 1991 to the Department of Energy through Military Interdepartmental Purchase Requests to directly support Nuclear Directed Energy Weapons activities. The amounts to be transferred for FY 1992 and FY 1993 are not known at this time.

Question: What SDI/NDEW related tests are planned for 1991 and 1992? What is the purpose and objective of each test?

Answer: The Department of Energy (DOE) is not conducting Nuclear Directed Energy Weapons (NDEW) research as a Strategic Defense Initiative Organization project, but rather as a part of the DOE mission to do threat assessment research on advanced nuclear weapons concepts that could threaten the United States strategic deterrent forces and future strategic defenses. The SDIO will benefit, however, from the resulting research conducted by DOE NDEW threat assessment work.

[DELETED]

The only NDEW underground test planned for FY 1992 is an x-ray laser experiment [DELETED]

Weapons Testing Program

The weapons testing program continues the downward trend of the past few years. While up slightly over the 1991 funding level, the program is 10% below the 1990 level of funding.

Question: How do you view this trend and is the request, in terms of both dollars and numbers of tests, adequate to support the national security needs and objectives of the country?

Answer: We view the trend with concern. While the FY 1992 request will enable the Department to meet minimum national security requirements, further erosion of WRD&T may indeed prevent us from meeting national security objectives.

Question: How does a declining level of funding in the testing program impact the technology base of the weapons labs?

Answer: The declining level of test funding impacts the technology base because the reduced level of testing precludes the designers and engineers from obtaining the results of experiments and tests of their designs.

Question: Given the importance of these activities to the national security, how do you justify this continued decline?

Answer: We have had to make some tough decisions in order to ensure that our highest priorities are funded in an environment of decreasing resources. Our budget request reflects an appropriate balance of many conflicting priorities.

Question: What is the status of the proposed reprogramming that would add an additional $20 million to the testing program for 1991?

Answer: A proposed reprogramming of $20 million to the testing program for 1991 is currently being circulated for approval within the Administration.

Question: What is the justification and need to conduct this test?

Answer: The reprogramming is required to bring overall test program funding into better balance with research and development funding for FY 1991 to permit us to follow through on the required number of tests planned for FY 1991 and preparations for FY 1992 tests. Receiving this funding late in the year means that specifically, it will be applied to test activities [DELETED] Funding will provide for emplacement hardware, diagnostic equipment, and for labor associated with event construction and diagnostics.

Question: What date do you assume the reprogrammed funds will be available?

Answer: We assume that the reprogrammed funding will become available in time to support activities planned for the remainder of FY 1991. Without successful reprogramming, major layoffs of contractor personnel at the Test Site would be required.

Question: How much of the $18 million will be obligated and expended in fiscal year 1991?

Answer: We expect to obligate and expend all of the reprogrammed funds in fiscal year 1991.

Question: Discuss the current status of the Combined Device Assembly Facility (85-D-105) at the Nevada Test Site, particularly the problem with the special doors needed for the facility?

Answer: The Combined Device Assembly Facility project is 63 percent complete. The remaining work includes minor remedial work on the facility, procurement and installation of the cranes and radiography machine, installation of security system, communications, paving, and the procurement of the special doors.

We do not foresee any more significant technical issues in the procurement and installation of the special doors. Discussions with the firms that have submitted proposals have clarified the major issues with respect to safety and security.

The challenge that lies ahead is minimizing the impact the special door problems have on the overall project schedule. The technical evaluation, based on audits, has been completed. There were items requiring additional information, which is needed for the preparation of the pricing proposal. Once this is done, the Nevada Operations Office will complete the pre-negotiation memorandum and forward it to Headquarters for approval. Once approved, negotiations leading to an award will begin. The bid acceptance period has been extended through the end of August 1991.

Question: How confident is the Department that the $12 million requested for 1992 can be fully and efficiently utilized in FY 1992?

Answer: The funding profile for the Combined Device Assembly Facility was based on awarding a contract for the special doors late in the second quarter or early in the third quarter FY 1991. The award will now slip until the fourth quarter of FY 1991. This slip will not impact our ability to use effectively the funding requested in the FY 1992 budget request.

Question: What is the status of appropriations, obligations, and expenditures for the project?

Answer: As of April 1991, $73,602,000 has been appropriated, of which we have obligated $66,699,110 and costed $52,936,199.

Question: How realistic is the 4th quarter 1993 completion date shown in the budget justification?

Answer: Given the slip in awarding the contract for the special doors, we expect completion in the first quarter of FY 1994.

Question: When will the review of the project cost estimated be completed?

Answer: The next review of project cost will take place in June 1991.

Question: What would be the impact in terms of higher costs if no further funding were provided for the project until a firm cost estimate were available?

Answer: The cost estimate is sufficiently firm to proceed with the project. If no FY 1992 funding is provided, we would anticipate a two-year delay in the project and an increase in construction costs of about $7,000,000. The two year delay would occur because of a year's delay in funding, the first year, and the time required to reinitiate the procurement process, the second year. The cost to maintain the existing facility during this period would be approximately $1,500,000 per year. During this two-year delay, we would continue to operate existing device assembly facilities with safety and security features which are less capable than those that would be provided by the Combined Device Assembly Facility.

Question: When does the budget request assume that the problems with the doors will be resolved?

Answer: The budget request assumed award of the special door contract in late second quarter or early third quarter FY 1991.

Weapons Production and Surveillance

At the time the 1992 budget was prepared the Nuclear Weapons Stockpile Memorandum had not been approved by the President. Therefore, the national security requirements for nuclear weapons was not clear.

Question: Has there been slippage in any Department of Defense (DOD) delivery/platform systems which would result in a corresponding slip in production schedule for the related warhead?

Answer: During the last year, the production programs for the Nuclear Depth/Strike Bomb (B90), Follow-on-to-Lance (FOTL), and Small ICBM (W87-1) were terminated because their DOD delivery/platform systems were placed on indefinite hold or terminated. The SRAM II (W89) and SRAM T (W91) warhead production programs were slipped as follows due to delivery system slippage:

	WARHEAD	START PRODUCTION	COMPLETE PRODUCTION
Last year	W89	1993	1998
This year		1994	1998
Last year	W91	1995	1999
This year		1997	1998

Laboratory Directed Research and Development

Earlier this year the Department submitted a report describing all overhead taxes and indirect charges which are made against direct programs and the justification for each program charge or tax as requested by the Congress in the conference report on the FY 1991 Appropriations bill. This is the Laboratory Directed Research and Development which the House subcommittee was critical of last year.

Question: What is the purpose of this type of flexibility and how important is it in assisting with the national security effort?

Answer: The Packard Panel Report (Federal Laboratory Review Panel of the White House Science Council, Office of Science and Technology Policy) issued in May 1983, expressed concern that the federal laboratory directors were not allowed enough flexibility to explore innovative scientific opportunities. The Report recommended that 5 to 10 percent of the Federal laboratories annual funding should be devoted to independent research and development (R&D). In December 1985 the Energy Research Advisory Board (ERAB) recommended that "current exploratory Research and Development levels of 1-2 percent [of] total operational funding should be increased to the range of 5-10 percent over the next five years."

The national laboratories have highly trained and competent staff and management working in the forefronts of science and technology. They are clearly in a strong position to determine those projects which have the greatest potential to benefit the national security and the scientific and economic vitality of the nation.

The Laboratory Directed Research and Development (LDRD) program is an important part of the mission of the national laboratories and plays a vital role in maintaining and upgrading our nuclear deterrent. Just as the existing nuclear weapon stockpile and current weapon production is based on past R&D, LDRD provides part of today's R&D base which will ensure the future vitality of the DOE weapons program. The need to expand and improve continually the Nation's science and technology base was demonstrated dramatically by the recent success of Operation Desert Storm. Our ability to respond to the increased ES&H requirements and our ability to improve the safety of nuclear weapons as recommended in the Drell Report is only possible as a result of past research and technology development projects.

LDRD (and its predecessor Exploratory Research and Development, ER&D) has had substantial success in contributing to the technology base of the Defense Programs and the nation. A long list of examples can be provided. In addition, it should be noted that many of the LDRD projects at the three DOE weapons design laboratories have resulted in a large number of R&D 100 awards, more than any other agency or company, public or private. These awards are given by industry for those developments which they believe are of greatest significance to the future of U.S. industry.

Question: What are the Department's current policies and procedures related to laboratory directed research and development?

Answer: The Defense Programs and Energy Research office worked together to produce a new DOE order (DOE 5000.4) that was issued on February 28, 1991, establishing uniform policy and guidelines for all the national laboratories' Laboratory Directed Research and Development (LDRD) programs. This order will be fully implemented by the Laboratories in FY 1992. Significant aspects of the new order are:

Laboratories must submit annual LDRD plans and reports

Laboratory LDRD plans and proposed annual funding levels must be approved by the Secretary

Laboratories LDRD activities must be reviewed annually by the cognizant Secretarial Officer and responsible DOE operations office

Laboratories must accumulate LDRD funds equitably from all sources of operating and capital equipment budget

LDRD projects will normally have a maximum period of funding (e.g., 3 years) to be established by the laboratory director and incorporated in the laboratory's LDRD management process unless exception is granted by the cognizant Secretarial Officer

> Establishes an upper limit of 6 percent of the laboratories operating and capital equipment budget which is consistent with levels recommended in reviews of the national laboratories by the Office of Science and Technology Policy and the Energy Research Advisory Board.

In addition, prior to implementation of the new order, the Deputy Assistant Secretary for Military Application sent a letter to the Laboratory directors requiring that all LDRD projects be submitted to DOE Headquarters. Each lab director was required to certify that the portion of the LDRD funds derived from Atomic Energy Defense Activities are being used for the "purpose of maintaining the vitality of the laboratory in defense-related scientific disciplines," in conformance with section 3132(d) of the National Defense Authorization Act for Fiscal Year 1991. The laboratories complied with this request.

Question: What audit and accounting controls have been established to monitor this work?

Answer: Department of Energy (DOE) Order 5000.4 issued on February 28, 1991, establishes the policy and guidelines regarding Laboratory Directed Research Development (LDRD). LDRD expenditures are considered an allowable cost in accordance with the terms and conditions of the laboratory operating contract and are identified in the laboratory accounting system. Each project has a proposal with a scope of work, budget, and schedule. Each project is uniquely budgeted for and has a unique cost code.

According to DOE Order 5000.4, each laboratory will submit an annual written report on its LDRD activities through the appropriate Operations Office Manager to the cognizant Secretarial Officer. The annual report should include a technical and financial summary of the program and a short description of each funded project. Additionally, each laboratory will provide reports to the Office of Scientific and Technical Information. Audits have been conducted on the LDRD program by both the IG and GAO during the past several years.

Question: The estimate of lab directed research at the 5 multi-program Defense labs range from 2-6% and totals some $140 million. What is an appropriate level on a percentage basis?

Answer: There are five Energy Research and four Defense Programs multiprogram laboratories authorized to conduct LDRD. The total funding estimated for all nine laboratories for LDRD in FY 1992 is $140.5 million; with a majority of the laboratories supporting the activity well below the maximum 6 percent. The estimates for Energy Research laboratories are in the 0.8 to 4 percent range; the Defense Programs laboratories are in the 2 to 6 percent range. These percentages reflect differences between the laboratories in research emphasis, location, and methods used to support the science and technology base. In general, external reviews have given the laboratories very high marks for their use of the discretionary Research and Development funding and recommended levels of 5 to 10 percent. A study conducted at the request of the Assistant Secretary for Defense Programs issued a report in April 1990, recommending a maximum level of 6 percent with the actual level at each laboratory determined by the quality of laboratory proposals and past performance on LDRD. The new Department of Energy order implements that recommendation.

Question: What would be the impact of limiting lab directed R&D to 3 or 4% on the Department's ability to address national security needs?

Answer: The "appropriate" level is a judgement call. However, as we reduce the efforts focused on long-range development, we increase the risk that other nations will equal and surpass our nuclear deterrent capabilities and/or negate our deterrent as a result of new technological breakthroughs. The actual costs are very small in the context of national defense. The benefit of long-range research has been demonstrated over the years by the laboratories ability to respond to new nuclear weapon system requirements in terms of mission, increased safety, reliability, enhanced command and control, improved manufacturability, etc. We must not lose sight of the critical need to maintain and improve our scientific and technological capabilities. In the light of the rapidly changing world and a highly uncertain future environment, it is appropriate, indeed essential, to focus significant resources to enhance our long-range research and development efforts.

Rocky Flats Plant Restart

The Dire Emergency Supplemental for 1991 provided $283 million for essential activities and to restart production operations at the Rocky Flats Plant.

Question: How is work proceeding and what is the schedule for restarting facility operation?

Answer: Work is proceeding in an organized and methodical manner according to the plan for resumption. EG&G has completed its corporate Operational Readiness Review (ORR). The DOE ORR team is expected to initiate the DOE ORR later this month. There is no specific schedule for resumption of the buildings and plutonium operations, since resumption will be dictated by assurance of safety and meeting the guidance already given by the Secretary.

Question: Can you provide a more specific schedule than the summer of 1991 for Building 559 and the fall of 1991 for building 707?

Answer: Given nominal timeframes for the Operational Readiness Reviews (ORRs), administration and concurrences at the Department of Energy (DOE) Headquarters between offices, and time for input by the Defense Nuclear Facilities Safety Board, it is currently estimated that buildings would resume operations approximately 60 days after the DOE ORR is initiated. The DOE ORR for Building 559 will start later this month. The DOE ORR for building 707 has not be set, however, it is expected to begin in early fall.

Question: What uncertainties could impact DOE's current schedule?

Answer: Schedule uncertainties would exist in the Operational Readiness Reviews if any safety problems which might take additional time to rectify, any legal challenges that enjoined the Department from proceeding according to schedule, any inability to meet restrictions set for waste storage and handling at Rocky Flats, and any unknown technical safety problems are uncovered.

Question: Can you be more precise on the date for restart of Rocky Flats that was assumed in developing the budget request for 1992?

Answer: The budget request for 1992 is in line with the current estimated start dates of the Department of Energy (DOE) Operational Readiness Reviews (ORRs) for each building which will undergo an ORR. Given a nominal time period of 60 days following the start of a DOE ORR and approval for resumption, the budget supports those plutonium operations expected to be in operation in FY 1992. Given schedule uncertainties, such as unknown technical safety problems or legal injunctions, the FY 1992 budget supports necessary operations to support resumption.

At this time the DOE ORR for Building 559 will begin later this month. The DOE ORR for Building 707 has not been set but is expected to begin in early fall.

Question: How would DOE meet their national security responsibilities if, as some have suggested, Rocky Flats was closed in the very near future?

Answer: Should Rocky Flats be closed prior to a new facility being available to produce plutonium components (pits) in the quantity necessary to satisfy stockpile requirements, the Department of Energy (DOE) would be limited in its ability to provide new weapon builds. [DELETED]

Safety improvements to the present stockpile could only be accommodated where there are no changes in the present design of the nuclear package. DOE would continue to provide support to the present stockpile with respect to limited life component exchanges as required.

Question: Has the Department explored the possibility of using SIS technology and the facility at Lawrence Livermore as an alternative to continued operation of Rocky Flats?

Answer: A preliminary study was conducted on the cost, feasibility, and time period of using the Lawrence Livermore Special Isotope Separation Facility design as a new Rocky Flats plutonium parts production facility. The study in the Fall of 1990 concluded that it would take a minimum of 10 years and $625 million dollars depending on the site chosen and the availability of infrastructure support before a production facility could be built and operating.

Question: What options exist or are being explored to manufacture pits if Rocky Flats operation is delayed or closed?

Answer: [DELETED]

Question: Would these options meet the production requirements presented in the stockpile memorandum? If not, please explain why (be specific by weapons system)?

Answer: [DELETED]

In addition to what is currently in the stockpile memorandum, the Drell Committee has made recommendations for safety improvements, such as the use of insensitive high explosive and fire resistance, where the feasibility for pit reuse would need further evaluation.

[DELETED]

Question: Does the complex have the capability to process and produce weapons specification plutonium ready for manufacture into pits at sites other than Rocky Flats?

Answer: The Department has operated plutonium scrap and residue recovery facilities at the Savannah River Site (SRS), Hanford and the Los Alamos National Laboratory as capabilities and schedules permitted. The types of plutonium scrap material that can be processed varies from site to site.

[DELETED]

Disassembled plutonium components from weapon returns are currently being processed by the F-Canyon. When the New Special Recovery facility becomes fully operational in FY 1992, the SRS will have a capability to dissolve impure metal. [DELETED]

At Hanford, plutonium recovery from scrap and residues is provided in the Plutonium Reclamation Facility (PRF), which is located in the Plutonium Finishing Plant (PFP). PRF is capable of processing plutonium oxides, plutonium scrap metals, plutonium nitrate solutions, plutonium sludges and plutonium ash. Preparations for startup of the PRF are underway. However, resumption of operation is dependent on resolution of environmental regulatory compliance issues. The Department plans to conduct limited stabilization operations in the PFP starting in mid-1991 to complete processing some of the materials remaining in the processing lines and to support material clean-out activities. These limited operations are necessary to place PFP in a safe standby mode and the recovered plutonium will be converted to an oxide form for safe storage/shipment as opposed to conversion to specification metal as was the case in past years. There are no existing or planned capabilities for processing of returns at Hanford.

At the Los Alamos National Laboratory (LANL), a wider variety of plutonium residues can be recovered as these facilities are operated primarily for research and development purposes. In addition to the residues capable of being processed at the SRS and in the PRF, Los Alamos facilities can be operated to process plutonium/beryllium sources, impure plutonium metals, plutonium/chloride oxides and a variety of low grade plutonium bearing materials. Approximately [DELETED] will be provided to Rocky Flats from LANL.

The capabilities for recovery of plutonium from scrap and residue materials are variable and, at Savannah River and Hanford, are dependent on other baseline plutonium production missions. The capacities at Los Alamos vary with the quality of the plutonium bearing material, particularly since these recovery facilities are operated, in part, to develop recovery methods.

Question: If DOE were directed not to restart the Rocky Flats facility, how would you meet the requirements of the stockpile memorandum?

Answer: If the Department of Energy (DOE) were directed not to restart the Rocky Flats facility, DOE would not be able to meet the requirements of the stockpile memorandum. DOE could use interim measures, such as pit reuse, to meet some aspects of the stockpile memorandum. However, its ability to support fully the stockpile memorandum, meet safety improvements in stockpiled weapons, and maintain a knowledge base and capability for future weapon production requirements would be severely undermined.

Question: What would it cost and how long would it take to provide an interim capability to replace Rocky Flats?

Answer: Initial studies indicate a facility which could produce plutonium components requires a minimum time period of 10 years and a minimum of $625 million dollars depending upon infrastructure available at the site chosen for the facility.

Question: The Reconfiguration Study focuses on two options for the weapons complex in the future and both options would relocate functions carried out at the Rocky Flats Plant. In addition, Secretary Watkins has said that the goal is to get out of Rocky Flats as soon as possible. Why then, can't the Rocky Flats be removed from the Reconfiguration process and placed on an expedited path for relocation and closure?

Answer: The Secretary's proposal to relocate nuclear weapons missions now carried out at the Department of Energy's Rocky Flats Plant is a key part of this proposal to reconfigure and modernize the weapons. Decisions on Rocky Flats cannot be made in a vacuum relative to decisions regarding relocation of other functions and/or facilities.

Question: Could some time be gained now instead of waiting for a Secretarial decision on the entire complex in fiscal year 1994?

Answer: There are options within the National Environmental Policy Act (NEPA) process to separate out decisions, such as Rocky Flats, prior to the final record of decision. The Programmatic Environmental Impact Statement (EIS) process, however, is already minimizing the time period for completing required NEPA activity by performing site-specific reviews for Rocky Flats in conjunction with the larger Programmatic issues. Time savings have, therefore, been built into the process to the maximum extent possible. It is believed that separation of the decision on Rocky Flats from the current programmatic EIS process would gain less than 3 months.

The NEPA process is only one part of the Rocky Flats relocation issue. A Site Evaluation Panel is evaluating several specific sites for a preferred alternative from the aspects of lowest life cycle cost, as well as environmental, sociological and other aspects of the siting.

Savannah River Reactor Restart/Tritium Requirements

None of the 3 Heavy Water Reactors (K, L, and P Reactors) at Savannah River have operated since 1988 because of operational, safety, and environmental problems. After over 2 years and many hundreds of millions of dollars, the Department of Energy hopes to restart the K Reactor in the summer of 1991.

Question: What are the current plans for the operation of the 3 reactors at Savannah River?

Answer: The Department issued a Record of Decision on February 4, 1991, that formalized the Department's decision to operate K Reactor and defer until later the operation of L Reactor. Operation of P Reactor will be deferred indefinitely and that reactor will be maintained in cold standby. Reactor restart is expected to be in the summer of 1991 for K Reactor. Our intent is that L Reactor be made ready to operate within 12 months notice in the event of problems with K Reactor reliability.

Question: How much has been spent since 1988 to bring these reactors, and associated personnel and management performance up to a standard which would allow restart?

Answer: For the period from FY 1988 through FY 1992, we anticipate that we will spend $1.7 billion for reactor restart activities. However, during the same period of time, we had planned on spending approximately $0.8 billion for operation of the three reactors. Therefore, we estimate that through FY 1992 we will spend $0.9 billion more than was originally estimated to have been spent on the reactors for the period.

Question: What level of confidence do you have that the K Reactor can be operated safely?

Answer: There are two major activities that will provide the Secretary with assurance that the K Reactor can be safely restarted and operated. First, the Department of Energy (DOE) has prepared a Safety Evaluation Report (SER). The DOE SER is very similar in concept to evaluations conducted prior to the startup of troubled commercial nuclear facilities, and it specifically outlines the activities that must be accomplished prior to a restart decision. Second, an Operational Readiness Review led by senior DOE personnel will be conducted. The results of these two efforts will provide sufficient information for the Secretary to make a restart decision. Of course, the Defense Nuclear Facilities Safety Board has been actively involved in the review of restart activities at the Savannah River Site reactors and their input will also play a role in the Secretary's decision.

Question: Are there any technical or safety issues which need to be resolved and what are the planned solutions for those problems?

Answer: The K Reactor is currently being tested to ensure that reactor safety systems are functional. This testing will identify if there are any outstanding technical issues that must be addressed before a restart decision.

Additionally, there are two known technical areas of concern that we are focusing attention on at this time.

First, a reactor design problem associated with gamma heating has been identified at the Savannah River Site reactors. Gamma heating is the absorption of gamma radiation by reactor in-core components which occurs normally during reactor operations. Gamma heating only presents a problem during the low probability occurrence of a loss of coolant accident, when the reactor tank partially drains causing in-core components to be exposed to air and not adequately cooled. Such an accident could result in the failure of reactor safety rods. Current efforts are being directed to manufacturing new components with materials that are able to withstand the postulated temperatures. Operating the reactors at a lower power level may preclude this problem. However, additional study is required.

Second, there are concerns with the ability of the reactors to withstand seismic events. Recently, it became clear that uncertainties related to the characterization of the "soft zone" earth layer below K Reactor are sufficient to require the consideration of seismically induced subsidence.

Question: Are there any legal issues which could impact your ability to restart the reactor in December as scheduled?

Answer: In the legal arena, there is a Consent Order between the State of South Carolina and the Department of Energy which allows the continued discharge of thermal effluents from K Reactor until December 31, 1992, pending construction and operation of a cooling tower. However, notwithstanding the Consent Order, the Natural Resources Defense Council, Inc., and the Energy Research Foundation have filed a suit challenging restart prior to completion of the cooling tower. The United States District Court for the District of South Carolina, in which this case is pending, has instructed the parties to set up a schedule under which the Court can hear argument sometime in July on a motion by the plaintiffs for a preliminary injunction against restart.

Question: Over the past 2-3 years the production reactor needs have changed significantly. Considering the tritium requirements needed for existing and new weapons, setting aside the reserve issue, does DOE agree with a recent GAO report which concluded that "without starting any reactors, sufficient tritium supplies will exist to meet the anticipated needs...for the next several years." And "...that one Savannah River reactor can meet projected tritium requirements over the remaining useful life of the reactor."?

Answer: The General Accounting Office (GAO) report you reference contains factually incorrect statements [DELETED]

This reserve issue cannot be set aside. Therefore, the conclusion of the report that there is additional time to evaluate outstanding issues before restarting the Savannah River Site reactors is incorrect and misleading.

If the tritium reserve [DELETED] is not included as demand, the Department of Energy analyses show sufficient tritium inventory to meet requirements through [DELETED] without new production. However, because of the length of the production cycle from irradiation through extraction, reactor production of tritium must be resumed at least 14 months prior to the expected shortfall date. However, we do not consider it prudent management to delay restart to the latest possible date as that does not allow time to deal with any unexpected problems with reactor restart, attaining planned power levels or processing irradiated targets. Therefore, the Department plans to restart one reactor during the summer of 1991 to [DELETED] assurance that the nuclear weapons stockpile will not be impacted.

Finally, we would like to emphasize that the GAO report did not disclose any new supply and demand information that the Department had not already shared with the Congress.

Savannah River Reactor Restart/Tritium Requirements

Question: What are the projected tritium requirements, exclusive of reserve and with the reserve component, for each year through 1996?

Answer: I will supply a table for the record which identifies the projected annual tritium supply and the projected annual tritium demand for the period FY 1991-1996. (The information follows):

PROJECTED TRITIUM SUPPLY AND DEMAND
FY 1991 - FY 1996

[DELETED]

Question: How does DOE plan to provide the material each year through 1996, i.e., reactor production, retirements, etc.?

Answer: In addition to the demands identified in the table that I provided for the record in response to the previous question, there is decay demand on the Department of Energy (DOE) inventories. This decay demand varies depending on the projected size of the DOE inventory over time [DELETED]

Any forecasted shortfall in supply is satisfied by utilizing inventories above the minimum required [DELETED] and the rest must be made up by production in the Savannah River Site reactors.

Question: How is the tritium reserve level determined (please be specific)?

Answer: [DELETED]

Question: Could you explain recent reports that DOE has sufficient tritium to last until 1994? Does this include an amount for reserve?

Answer: Exclusive of any reserve requirement, it is estimated the nuclear weapons stockpile will be adversely impacted about [DELETED] without new production. However, because of the length of the production cycle (irradiation in reactors, basin cooling of irradiated targets, and extraction of tritium from the cooled targets) the reactor production of tritium must resume at least 14 months prior to that expected shortfall date. [DELETED]

Question: How has the requirement to refill tritium bottles changed since 1970?

Answer: [DELETED]

Question: Is DOE working on any technologies or advancements that would change the refill cycling? If so, please explain.

Answer: The Department of Energy (DOE) continues to investigate technologies and advancements to extend refill cycling periods. [DELETED]

Question: How will retirement of weapons in the stockpile change in the future?

Answer: The surge in retirements between FY 1991 and FY 1993 as shown by the table, provides an additional tritium resource to the Department of Energy (DOE). Because all tritium decays at a rate of 5.5 percent per year, these quantities only serve to forestall DOE tritium shortfalls for a short time. Without these retirements, DOE would be facing immediate problems with availability of tritium gas and the requirement to restart several tritium reactors as soon as possible. Reactor restart for tritium production remains critical to stockpile maintenance activities [DELETED] , but with reduced stockpile levels, we now require the immediate operation of one reactor to accomplish this task.

FY 1990	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996
[DELETED]						

Question: What has been the level of retirements each year since 1987 and how did the actual retirements compare to those planned and the levels projected in the Nuclear Weapons Stockpile Memorandum?

Answer: I would like to provide the information for the record. (The information follows:)

	FY 1987	FY 1988	FY 1989	FY 1990
NWSM Projected Retirements	[DELETED]			
Actual Retirements, End of Year	[DELETED]			

Each year after the NWSM is forwarded, the stockpile is updated approximately quarterly via the Planning & Production Directive. For example, in 1988 there were a significant number of changes in retirements. The rationale for these is as follows:

After publication of the FY 1988-1993 NWSM the DoD requested accelerating the retirements of several systems. [DELETED]

The [DELETED] warheads were a mix of systems reflecting small DoD inventory adjustments. DoD and DOE agreed with these increased retirements.

Question: Isn't there a double benefit to tritium requirements by retiring existing weapons-retrieving tritium in the weapon for reuse and not having to provide future tritium refilling?

Answer: After taking tritium decay into consideration there would be some benefit to tritium requirements by retiring a weapon versus providing tritium refilling, but not "double". Reuse of existing tritium in weapons being retired has already been incorporated into calculations provided to Congress regarding tritium requirements for the stockpile.

Question: How long can DOE meet their tritium requirements without the New Production Reactor? Is it unreasonable to think that DOE could provide the necessary tritium into the next decade through optimum management of retirements and operation of the K Reactor at Savannah River?

Answer: The need for tritium is dictated by the Nuclear Weapons Stockpile Memorandum which is approved annually by the President. The latest memorandum, which has been signed since last year's budget submittal, dictates a need for tritium that is significantly lower than the corresponding memoranda from 1988 and 1989. Due to changes in material needs, the Department expects to be able to meet requirements by operating only one Savannah River Site (SRS) reactor, K. A second reactor, L, will be maintained in a ready status should it be needed,

There are no viable near-term alternatives for the production of tritium other than the SRS reactors. No life-limiting conditions at these reactors have been identified, even though they are nearly 40 years old. We are instituting enhanced inspection and testing that should alert us to changes in the reactor situation so that preventative maintenance and/or replacement of equipment can be performed in a timely manner. With the improved maintenance practices we are initiating, we are optimistic that these reactors will be able to operate until new capacity is available. However, based on plans underway in the commercial industry for its aging reactors, it is important that this new capacity be developed on an aggressive schedule.

Nuclear Weapons Complex Reconfiguration

Question: Please provide the Committee with a brief summary of the conclusions and recommendations of the Study? How long would it take to complete this effort and what are the preliminary cost estimates to carryout the various options?

Answer: The Nuclear Weapons Complex Reconfiguration Study (CRS) contains four primary conclusions. The first is that the size of the nuclear weapons stockpile is getting smaller and will likely continue to do so for the foreseeable future. The second is that the existing nuclear weapons complex is oversized for the current and projected nuclear weapons production requirements and therefore is inefficient, somewhat technologically obsolescent, and suffering from numerous materials condition problems. The third is that the ownership and operating costs of the existing nuclear weapons complex are likely to increase to achieve and maintain compliance with Federal, State and local laws, regulations and orders. The fourth is that the only credible way to address all of the aforementioned issues is to reconfigure the nuclear weapons complex and reduce its size.

There are three primary recommendations coming out of the CRS. The first is that the nuclear weapons complex should be reconfigured to relocate the operations of the Rocky Flats Plant, and any other nuclear operations that may be beneficially collocated with them, at a single complex site. The second is that the nonnuclear manufacturing operations of the nuclear weapons complex should be consolidated and privatized to the maximum extent consistent with economic realities and security requirements, with a goal of having a single dedicated nonnuclear manufacturing site in the nuclear weapons complex. The third is that future nuclear weapons complex facilities should be designed with the ability to flexibly respond to changing workload requirements and the ability to readily incorporate new technologies as they become available.

The CRS projects that the nuclear weapons complex could be reconfigured, given the uncertainties surrounding the fiscal, environmental and legal issues that are likely to emerge, no later than FY 2015. The Department of Energy has a goal for a major portion of the reconfiguration effort early in the next century. The preliminary cost estimated for reconfiguration activities are documented in a number of tables located in the CRS. The capital and non-capital cost estimates for reconfiguration range from $6.7 billion to $15.2 billion, depending upon the alternatives and stockpile cases chosen.

Question: What are the major milestones and schedule for completing the Record of Decision and initiating work on the reconfiguration effort?

Answer: The Department of Energy is preparing a Reconfiguration Programmatic Environmental Impact Statement (PEIS), which will lead to the issuance of a Record of Decision on the future configuration of the nuclear weapons complex, and is in the process of procuring an architectural and engineering (A&E) firm that will develop and analyze the preliminary designs for future nuclear weapons complex facilities. The major milestones for the PEIS are: Complete Public

Scoping Meetings, September, 1991, Publish Draft PEIS, November, 1992; Complete Public Hearings on Draft PEIS, March, 1993; Publish Final PEIS, June 1993; Issue Record of Decision, October, 1993.

Question: In light of the major commitments that DOE currently has underway (SSC, environmental restoration and waste management, New Production Reactor, etc.), how does the Department plan to address the budgetary issue presented by this massive undertaking? How do you see the reconfiguration effort meshing with DOE other commitments without adverse budgetary impact?

Answer: The present nuclear weapons complex will continue to require increasingly larger operating funds to upgrade the facilities to comply with Federal, State and local laws, regulations and orders in order to fulfill its defense missions. The reconfiguration and downsizing of the nuclear weapons complex offers the opportunity to reliably satisfy the Department of Energy's defense obligations for the long-term. The Department of Energy believes that a substantial, real increase in its near-term budget will be required following the Record of Decision for Complex-21. In the near term, tough decisions will need to be made to balance the priorities to minimize any adverse budgetary impact. The Superconducting Super Collider does not directly compete with defense activities for funds, though it obviously places large demands on the Nation's limited fiscal resources.

Question: What are the national security implications of a more compact and less diverse nuclear weapons complex?

Answer: The reconfigured nuclear weapons complex is planned to maximize its ability to respond to rapidly changing workloads and stockpile requirements. It would be designed to facilitate the timely and cost-effective incorporation of new technology into nuclear weapons complex operations, as it becomes available. Properly configured and executed, the reconfigured nuclear weapons complex will be capable of meeting all the Defense Programs mission more economically without adverse impacts on national security.

Question: What is the justification for the budget request for the Office of the Deputy Assistant Secretary for Weapons Complex Reconfiguration going from $225,000 in FY 1991 to over $43,000,000 in FY 1992? What is the basis for the $42 million request for contractual services?

Answer: The $42 million in FY 1992 for contractual services includes $25 million to fund preparation of the Programmatic Environmental Impact Statement (PEIS) by a PEIS contractor. Activities include an Architectural and Engineering contract to develop conceptual designs and to continue to define feasibility and cost estimates for reconfiguration options; selection of candidate sites for relocation of the Rocky Flats Plant; evaluation of outsourcing the production of non-nuclear components; and exploration of consolidation of other activities to effect operating cost savings.

It also includes $17 million to provide contractor support to the implementation of the Capital Asset Management Process (CAMP) and the Condition Assessment Survey (CAS) initiatives. CAMP, a planning tool, is an auditable process to plan, program and budget for capital asset requirements similar to the way the private sector handles these functions. On an annual basis, CAMP will consider mission requirements and the assets needed to meet those requirements, an assessment of the physical condition of the assets, and near and long term projections of activities and funding necessary for proper stewardship. CAS is an adjunction to CAMP that involves the actual inspection of DP facilities and equipment using consistent standards and methods. Inspections will provide to line managers valuable data such as remaining useful life of assets, functional obsolescence, and maintenance needs.

The remaining $1,165,000 requested in FY 1992 is to fund the 15 full-time-equivalent federal employees to manage and provide oversight to the reconfiguration activities. Since the Reconfiguration Office was not established when the FY 1991 Budget was submitted, the amount of $225,000 was included for 3 full-time-equivalents to get the office established. This funding provides no contractual support.

Inertial Fusion Program

Recent reports by the National Academy of Sciences and the Department's Fusion Policy Advisory Committee recommended changes in the Inertial Fusion program.

Question: Briefly, what changes were recommended and how is the Department incorporating those recommendations into their planning and budget targets?

Answer: The National Academy of Sciences (NAS) Inertial Confinement Fusion (ICF) Review Group established the "expeditious demonstration of ignition and gain" as the highest technical priority of the ICF program. The Secretary has concurred with the findings of the NAS committee and sent his response to Congress on February 21, 1991.

The NAS committee also judged the glass laser technology to be the most mature of the driver technology options and the only one likely to be able to achieve ignition by the end of the decade. In response to NAS recommendations, the Department has redirected institutional resources. Thus, $8M has been provided to the Precision NOVA project at the Lawrence Livermore National Laboratory by reducing funding for the AURORA KrF gas laser at the Los Alamos National Laboratory (LANL), and another $2M of funding at LANL has been designated to support Precision NOVA making a total of $10M. In FY 1991, $8.5M was provided to initiate the OMEGA Upgrade activities (e.g., National Environmental Policy Act (NEPA) compliance and certain long lead procurements) at the University of Rochester's Laboratory for Laser Energetics (LLE). These and other activities

INERTIAL FUSION PROGRAM

Budget Expenditures (in millions)

Defense Programs	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97
Priority 1 Base Program Ops	157.7	157.9	164.2	170.8	177.6	184.7	192.1	199.8
Precision NOVA		25	25	25	25			
OMEGA upgrade		15	15	15	5			
NIKE Accel.		2	2	2				
NOVA upgrade Prototype			25					
Priority 2 NOVA upgrade				25	50	150	125	50
TOTAL		199.9	231.2	237.8	257.6	334.7	317.1	249.8

National Academy of Sciences Recommendations are intended to provide technical justification for construction of the ignition and gain facility (e.g. the NOVA Upgrade).

The NIKE laser development at the Naval Research Laboratory is being accelerated with assistance from LANL. The Sandia National Laboratories is concentrating its efforts on improving ion beam divergence and focusing on the Particle Beam Fusion Accelerator in anticipation of a program review in 1992.

The Department is also implementing certain organization changes recommended by the NAS committee. The Department has elevated the Division of Inertial Confinement Fusion to the status of the Office of Inertial Confinement Fusion under the Deputy Assistant Secretary for Military Application and is taking appropriate actions to form a committee to advise the Department on technical matters and policy of importance to the national ICF program. Further, the Department has conducted a review of ICF classification policy to identify areas where the present guidelines might be modified to facilitate university and industrial participation without encouraging nuclear weapons proliferation. The final report of this review is under consideration by DOE management.

Question: If full implementation were to proceed, how would the budget for Inertial Fusion change?

Answer: Full implementation of the National Academy of Sciences (NAS) recommendations would require a significant increase in funding for the inertial fusion program. I will provide a table for the record which presents hypothetical outyear funding of the inertial fusion program and displays the recommended funding by NAS. The outyear dollars for the base program are based on fiscal 1991 appropriations for operational expenses increased by 4 percent in the outyears. (The information follows the next question.)

Question: Provide a funding profile which fully implements the recommendations along with a profile of the budget planning targets over the next 5 to 10 years.

Answer: I will provide the information for the record. (The information follows:)

Question: What is the status of the Laboratory Microfusion Capability Study?

Answer: The Laboratory Microfusion Capability Study is within four months of completion. The initial draft of the final report should be complete by late May, with the final report expected by the end of August 1991.

Question: How much is the facility expected to cost and when will the program be ready to undertake such a project?

Answer: Current estimates for the cost of the Laboratory Microfusion Facility (LMF) are $600 million to $1.2 billion (1989 dollars). The exact cost depends on the LMF scope and the optional systems (e.g., additional target chamber) deemed feasible. While the goal of the Inertial Confinement Fusion program is to develop and operate the LMF, the Department of Energy intends to follow the latest recommendations of the National Academy of Sciences (NAS), which call for "expeditious demonstration of ignition and gain" as the highest priority of the program. To follow the NAS guidelines, the ICF program will first focus on Precision NOVA experiments to achieve technical grounds for proceeding to an ignition facility, which in turn will support a decision on whether to proceed with an LMF. The rate of progress toward realization of an LMF will, of course, depend on the technical success of the program as well as level of funding. If both are good, construction of an LMF could begin as early as 2000.

Question: Both the AURORA program at Los Alamos Lab and the NIKE program at the Naval Research Lab use krypton fluoride (KrF) laser technology in pursuing scientific research. How are these program different and why was the AURORA program ranked lower than the NIKE program by the National Academy of Sciences?

Answer: Although both the AURORA and NIKE programs use KrF laser technology, their respective program objectives were different. The goal of the AURORA program was the demonstration of KrF laser technology as an inertial fusion driver. On the other hand, the NIKE program is to build a KrF laser with high uniformity with which experiments on direct drive instability studies can be conducted. The NIKE laser aims to produce a laser beam with greater than 1 percent uniformity with which laser plasma instabilities in flat plate geometry can be studied.

The National Academy of Sciences (NAS) recommended that the Inertial Confinement Fusion (ICF) program concentrate on achieving ignition and modest gain in the laboratory using an upgraded NOVA laser. Considering funding limitations and a thorough review of the AURORA program, the NAS reviewers considered it too difficult and expensive to implement a full implosion capability on AURORA. Specifically, the NAS report stated, "Moreover, the AURORA laser cannot be used to prove the NOVA Upgrade will succeed in reaching the goal of ignition in an x-ray driven hohlraum target."

On the other hand, the NAS concluded that the Naval Research Laboratory (NRL) is a relatively small and innovative part of the ICF program and a proponent of direct-drive. "It (NRL) has been a pioneer in experimental and theoretical studies of Rayleigh-Taylor instabilities, and has provided much of our understanding of how ablation suppresses potentially fatal growth of these instabilities and makes it possible to contemplate direct-drive targets." The NAS recommended "an acceleration of the NIKE construction schedule."

Inertial Fusion

Question: When does the Department plan to close out the AURORA laser program, how much will be spent of that program in 1991 and 1992? What is the justification for these expenditures?

Answer: The AURORA program is being phased out in FY 1991. This includes an associated reduction in force action at the Los Alamos National Laboratory (LANL). In FY 1992, laser activities at LANL will be in support of the NIKE KrF laser construction and the NOVA glass laser program. I would like to provide further information for the record. (The information follows):

Year	Budget	Activity and Justification
FY 1991	$2.2 M	Downsizing Studies and Initiate Facility Decommissioning
FY 1992	$0.7 M	Complete Facility Decommissioning

Question: Provide for the record for each facility the technical justification, the forecasted results expected for each facility, and how the technical objectives of the programs are being achieved. Also, specifically describe program plans by individual laboratory and facility for fiscal year 1992.

Answer: The Particle Beam Fusion Accelerator II (PBFA II) at the Sandia National Laboratories in Albuquerque provides an alternative to high energy lasers as a driver for inertial fusion. That concept uses a beam of light ions to drive the imploding capsule. This alternative concept reduces the risk in developing an affordable driver for inertial fusion in a laboratory.

PBFA II is now being operated at full energy and techniques are under test for concentrating that energy to maximize the power delivered to the target. Other tests are designed to optimize sources for generating lithium ions. Experiments in focusing the beams and coupling them to diagnostic targets are underway. Experiments with imploding targets will start this year.

The HERMES III accelerator, also at the Sandia National Laboratories, was developed as a weapon effects simulator. HERMES III has been operated as a positive polarity machine, as is required of a light-ion accelerator. This alternative design offers promise as a pre-prototype module of a driver for a Laboratory Microfusion Capability. It is not yet known whether a laser or particle beam driver will ultimately be most efficient for driving inertial fusion implosion systems.

Overall the Sandia Inertial Confinement Fusion program is emphasizing reduction in ion beam divergence and conducting of target physics experiments at increasing power concentration. The major program milestone for fiscal year 1992 is the successful completion of a major review of technical progress in the summer of 1992. This program is consistent with the recommendations of the National Academy of Sciences (NAS).

The Lawrence Livermore National Laboratory (LLNL) operates the world's most powerful solid state laser, NOVA, as an inertial fusion research experimental facility. NOVA is also used by researchers in a number of other fields, including weapon physics. In the inertial fusion program, NOVA is used mainly for indirect drive experiments--laser beams converted to x-rays which then couple to the fuel capsule.

By FY 1992, improvements to the NOVA experimental facility will have been completed as part of the Precision NOVA development program and will result in improved beam balance, pointing accuracy, and improved diagnostics.

LLNL is conducting an experimental campaign on NOVA which is designed to explore the interaction of lasers with plasmas and imploding capsule physics. Issues to be explored include pulse shaping, requirements for symmetry and balance in the laser irradiation, laser-plasma coupling efficiency, stability of fuel/capsule interfaces, and target designs intended for high gain implosions. Current plans consider a possible upgrade of the NOVA laser to an energy output of 1.5 MJ to 2.0 MJ to achieve ignition and modest gain (<10) by 2000 in support of the NAS recommendations.

The University of Rochester, Laboratory for Laser Energetics (UR/LLE) currently operates the 24 beam, 2kJ OMEGA laser. To determine the future role for direct-drive, experiments need to be conducted at near-ignition conditions, unattainable at present. While beam-smoothing techniques have permitted high-quality, direct-drive implosions to study the limitations on target performance imposed by hydrodynamic instabilities, the direct-drive data base is insufficient to assure the success of high gain targets. These experiments are not possible on the existing NOVA facility at LLNL, since that laser does not produce smooth enough beams nor satisfy the strict uniformity requirements required for direct-drive. Modifying the existing NOVA laser for direct-drive would cost more than the OMEGA Upgrade and would compromise the mission of that facility, which is to validate the indirect-drive concept prior to construction of the NOVA Upgrade for ignition and gain.

The Naval Research Laboratory conducts model studies on instabilities. Inertial fusion experiments have stopped on the PHAROS III glass laser. The Naval Research Laboratory effort is focused on development of a small, 3 to 4 kJ, KrF laser called NIKE.

The goal of the NIKE development is to demonstrate a laser beam illumination uniformity on target of plus or minus one percent and continue collaboration with the Los Alamos National Laboratory on KrF technology development. Completion of NIKE will allow basic experimental investigation and validation of the results of theory and computer simulations for KrF laser-matter interaction experiments.

AURORA facility decommissioning is starting in FY 1991. The decommissioning will be completed in FY 1992.

Question: Provide for the record a funding profile of the total estimated cost by year through completion and the milestones for the following projects:

Precision NOVA
NIKE Laser Development
Omega Laser Upgrade
Pulsed Power Development
NOVA Beamlet

Answer: I will provide the information for the record. (The information follows:)

PROJECT FUNDING [1]
(Dollars in Millions)

Activity	FY 1990	FY 1991	FY 1992	FY 1993
Precision NOVA [2]	$ 8.8	$ 7.8	$ 6.1	$ 3.1
NIKE Laser Development	4.9	8.8	9.2	11.6
OMEGA Laser Upgrade	0	8.5	8.1	8.2
Pulsed Power Development	29.2	31.3	34.7	35.1
NOVA Beamlet	0	3.4	3.7	3.8

The major milestones for the above projects are:

- NIKE:

  FY 1991 - Complete Beamline A and High Energy Discharge Array

  FY 1992 - Complete Beamline B, and 20 cm Amplifier

  FY 1993 - Complete Target Facility, Control Systems, and Systems Integration

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[1] The Department of Energy has not established funding profiles for the NOVA, NIKE and Pulsed Power activities beyond FY 1993, since they are not classified as major projects but operating and/or capital equipment acquisitions for experimental research programs. A funding profile was developed for the OMEGA Upgrade, since it is a major modification to an entire laser/target experimental system. However, available funding was greatly reduced from the plan and therefore total projected cost and schedule is being reevaluated.

New Production Reactors

The budget request for FY 1992 for the New Production Reactors program is $500 million, consisting of $152.3 million in operating expenses, $336.5 million in construction funds, and $11.2 million in capital equipment funds.

The Department's preferred strategy of proceeding with a Heavy Water Reactor (HWR) at Savannah River, a Modular High-Temperature Gas-Cooled Reactor (MHTGR) at Idaho Engineering Lab, and contingency development of a Light Water Reactor (LWR) tritium target for use in the partially completed WNP-1 reactor at Richland has been changed. The new strategy is to continue preliminary design of both the HWR and MHTGR through the Record of Decision in December 1991 at which time the Department would select a single technology and site.

Uncertain tritium requirements brought about by a significantly reduced stockpile coupled with the restart of the K Reactor at Savannah River bring into question the Departments "urgent" schedule to bring a NPR on line.

Question: Why was it necessary to change the New Production Reactor strategy from the Department's 2 reactor-2 site preferred strategy to a single reactor technology-single site strategy?

Answer: The concept of building two new production reactors at two sites could no longer be supported given the multiple competing priorities within the Atomic Energy Defense account. Therefore, at the Record of Decision scheduled for December 29, 1991, the Department proposes to select only a single reactor technology and site with which to proceed into detailed design and construction.

Question: Was it simply budgetary constraints or were there other factors (including tritium requirements) involved?

Answer: The decision to prematurely curtail the preferred duality strategy of two reactor technologies built at two sites was based upon funding constraints within the Atomic Energy Defense account. The Department has always maintained that duality is the preferred approach to providing an assured supply of nuclear materials.

Question: What impact does Secretary Watkin's statement that the Department can provide enough tritium to meet production requirements through the decade have on the NPR construction schedules?

Answer: Secretary Watkins' statement was based on the assumption that the Department would be able to produce tritium from the current production reactors in Savannah River which have been shut down since April 1988. One of these reactors is scheduled to be restarted later this year with another to be placed on standby and the third closed down. Currently these reactors are 37 years old and will be 47 years old when the proposed New Production Reactor is scheduled to be operational. Therefore, the New Production Reactors Program has not altered any construction schedules and will remain on an urgent schedule.

Question: What risks are associated with going to a single reactor strategy and how might this change DOE's evaluation of the competing technologies?

Answer: The primary risk associated with building only a single reactor is that the Nation will have only a single source and location for tritium production in the next century. To mitigate the possible effects of this, we are developing a contingency light water reactor tritium target. The three reactor technologies identified initially by the ERAB were the most advanced and reliable technologies proposed for tritium production. Therefore, Department of Energy's evaluation of these competing technologies will not be altered due to the fact that we are currently proposing to build only a single reactor.

Question: There has been some concern expressed about how DOE will ensure that the NPR will "meet or exceed" safety levels afforded by modern commercial nuclear power plants. Is this level of safety needed and how will DOE ensure it?

Answer: One of the primary objectives of the New Production Reactors (NPR) Program is to provide a level of safety and of safety assurance that will meet or exceed that offered to the public by modern commercial nuclear power plants. The Department stands firmly behind this commitment. The NPR Program has developed specific safety requirements that "meet or exceed" the requirements for modern commercial nuclear power plants. These requirements are in addition to the Department's own standards. The design, construction and operating organizations within the NPR are strictly responsible for complying with these safety requirements. Independent of these line management organizations, there is a self assessment Office of Safety and Quality which reports to the Director of the NPR Program and is responsible for conducting comprehensive evaluations of compliance with the safety requirements. They will verify for the Director that the safety standards have been met or exceeded. The Office of Nuclear Safety, reporting directly to the Secretary of Energy, will likewise do the same validation for him. Finally, the Defense Nuclear Facilities Safety Board, an organization separate from Department of Energy, is providing oversight of the safety of the NPR design, and will provide oversight of the construction and operation of the new reactor with recommendations made directly to the Secretary.

Question: What are the major milestones between now and selection of the technology and site?

Answer: The major milestones between now and the Record of Decision include issuance of the draft Environmental Impact Statement, which was done on April 19, 1991; issuance of the final EIS, scheduled for November 29, 1991; and finally the Record of Decision, the selection of the technology and site, which will occur on December 29, 1991. Currently the NPR Program is in the midst of a 60-day public comment period which will be completed on June 17, 1991. During that time the NPR will hold 13 public hearings at five states around the three proposed sites.

Question: What is the total project cost estimate for both the HWR and MHTGR technologies? Provide a funding profile, through completion, for each technology along with a schedule of the major milestones.

Answer: The New Production Reactor (NPR) has developed a total estimated cost (TEC) based upon conceptual designs which cover capital and construction costs only. The TEC for the heavy water reactor, on a ten year construction schedule, is $5.490 billion in year-of-expenditure dollars and for the modular high-temperature gas-cooled reactor plant, on a twelve year construction schedule, is $5.466 billion. The MHTGR is a four module plant which equates to one-half the output capacity of the proposed HWR. As part of the preparations for the record of decision, the NPR Program is currently developing the TEC for an eight module gas reactor plant which could produce a comparable amount of tritium to the HWR. The total project cost (TPC) estimate includes the TEC plus operating costs associated with the Project such as EIS preparation, training of operators, and safety oversight activities. These costs are being identified an, along with other life cycle costs, will be available prior to the Record of Decision. The overall schedules for the NPR Program are currently being revised to reflect the new funding levels and the one reactor strategy as outlined in our FY 1992 budget request. We anticipate that this activity will be completed during the summer of 1991.

Question: What is the status of the Department's review and conclusion related to the potential use of a linear accelerator to product nuclear materials?

Answer: The conclusions reached after a technical review of accelerator technology is that it is considered to be an insufficiently mature technology for the Department to build a production machine by the year 2000. Significant questions remain regarding technical feasibility, operational reliability, cost and the availability of a dedicated power source.

Question: If the MHTGR technology is not selected, what impact would that have on the commercial nuclear energy development program?

Answer: If the modular high-temperature gas-cooled reactor technology is not selected as the New Production Reactor technology, the commercial program would suffer a significant delay and would require a restructuring of the program within existing budgets.

Question: How much is included in the budget request for LWR target development and will it be completed in FY 1992? If not, provide a funding profile by year through completion.

Answer: The light water reactor (LWR) tritium target development will be completed in FY 1993. The budget request for LWR target development in FY 1992 is $25 million and in FY 1993 it is also $25 million.

New Production Reactors

Question: The FY 1992 Budget of the United States Government (normally referred to as the appendix to the budget) includes language related to the New Production Reactor. Could you explain why this language is needed and why it was not included in the Department's detailed budget justification document?

Answer: The language which your question refers to is the following: "...of which $100,000,000 shall be for the design of new production reactor capacity, to become available for obligation sixty days after issuance of the Record of Decision on the Environmental Impact Statement on New Production Reactor Capacity,".

This language is not necessary for the Department to carry out these activities, however, it is consistent with the activities and schedule anticipated in FY 1992. It is our understanding that the Office of Management and Budget added this language late in the process primarily so that the outlays scored against the $100,000,000 in Budget Authority could better reflect real expectations rather than a higher rate driven by the formula used for the overall account. This was necessary to stay within the outlay target for the 050 function. Finally, because this decision was made late in the process and the Department's budget had already been printed, this language change does not appear in the Department's detailed budget justification document.

Naval Reactors Development

The FY 1992 budget request transfers funding for the enriched material program to Naval Reactors. This amounts to $122.8 million.

Question: What is the justification for funding the enriched materials program under Naval Reactors?

Answer: It was decided to place budget responsibility with the user. All of the material produced with this funding is used by Naval Reactors.

Question: The committee understands that the Department is currently reviewing the potential uses of surplus enriched uranium that may be available from weapons retirements and other activities. When did the Department first become aware of this possibility and what are the potential uses of this enriched uranium?

Answer: The Department first became aware of the potential for surplus enriched uranium from the weapons program when it became apparent there would be a reduction in the number of nuclear weapons. Potential uses for this material include naval reactors, new production reactors, and research reactors.

Question: What is the current status and schedule for completing DOE/DOD coordination and review activities and making a decision?

Answer: The review effort will be completed this Summer. It will present options and recommendations for decision by the Secretary of Energy and the Secretary of Defense.

Question: What criteria will be used in making the decision?

Answer: The criteria used to make the decision will include weapons requirements, other user needs which are defense and non-defense related, and production capability in the event additional material is needed in the future.

Question: What are the potential budgetary savings if this material is used for other purposes? Provide a table showing the estimated savings for each possible use.

Answer: The review to be completed this summer will include the estimated budgetary savings if this material is used for other purposes. The budget savings can vary greatly depending on the specific quantities and timing of material availability for the various applications. The impacts on the need for new and/or existing production and processing facilities will be included.

Question: Are there any scientific or technical reasons why this material could not be used in Naval reactors?

Answer: [DELETED]

QUESTIONS SUBMITTED BY SENATOR DOMENICI

Technology Transfer

Mr. Chairman, I am pleased to report that we are making significant progress in implementing the National Competitiveness Technology Transfer Act that was adopted as part of the FY 1990 Defense Authorization Act.

I am pleased to say that the Secretary of Energy has made a strong commitment to implementing the policies embodied in the bill, and that we are seeing promising collaboration with other federal agencies, most notably the Department of Commerce. The federal government is launching an initiative which I believe makes the valuable scientific talent and resources of our national laboratories available to the private sector to help promote America's competitiveness in world markets.

May I say I count on the continued strong support of the Department of Energy, and aggressive action by the Administration, to make this initiative a success. A great potential is there, and we have passed it up for far too long. It is time to be on the move.

For FY 1992, the President has requested $32 million for the technology commercialization initiative. This is $12 million above the FY 1991 funding level that this Subcommittee so generously supported last year. I am pleased by the budget request, however, I understand that the responsibility for the technology transfer program has been put under the Acting Deputy Science and Technology Advisor for Defense Programs.

Question: What is the rationale for the reorganization of responsibility for technology transfer?

Answer: The realignment of the technology commercialization function to the Defense Programs Deputy Science and Technology Advisor will significantly elevate the reporting stature of this program to an appropriately higher level within the DP organization. This realignment was part of a broader realignment of functions within the Department and was done to improve the management of current high priority programs including technology transfer. Of paramount importance in this realignment is the fact that the Defense Programs Deputy Science and Technology Advisor's role is one of direct oversight of the weapons laboratories and the conduct of day-to-day interactions with the laboratory directors so as to further technology commercialization and other Departmental national security goals and objectives. In this capacity, the DP Deputy Science and Technology Advisor will be in the best position to manage and oversee the maturation of the Defense Programs technology commercialization program with our national laboratories, field offices, and industrial partners. These changes should be of enormous benefit to this rapidly growing program.

Question: How will the Department's transfer of these program responsibilities improve the operation of the program?

Answer: This function within the Defense Programs' Science and Technology portfolio, as opposed to being combined with export control, classification, or specific technology programs, provides increased attention to technology transfer, thereby improving its operation.

Question: Will the Department, through the Acting Deputy Science and Technology Advisor, be aggressive in implementing the Tech Transfer Act?

Answer: The Department plans to continue its aggressive and vigorous implementation of the National Competitiveness Technology Transfer Act. The involvement of the Deputy Science and Technology Advisor in the Defense Programs Technology Commercialization Initiative is another indication of high-level support to the overall technology transfer effort of the Department.

Question: Would you please bring the Subcommittee up-to-date on the coordinating efforts the Department is taking to learn from, and to cooperate with, other federal agencies involved in technology transfer activities?

Answer: Within Defense Programs, under the Technology Commercialization Initiative, there is a concerted effort to assure cooperation with other technology transfer efforts, including those within DOE as well as with other Government agencies and to benefit from their experience. Within the Department, there are periodic meetings with other programs to review activities and identify opportunities for potential collaboration. This has already resulted in joint funding of several projects. In the advanced manufacturing area, Defense Programs is participating with the Department of Defense and other agencies in reviewing the DOD MANTECH program and developing a National Defense Manufacturing Technology Plan. Specifically, Defense Programs is leading the review of the role of technology transfer and manufacturing extension services in that plan. Defense Programs is also represented in a number of other interagency activities such as the DOD Centers of Excellence and the Advanced Manufacturing Study of the National Science Foundation. In addition, the laboratories have been encouraged to seek the involvement of other agencies in their programs.

Question: Please provide a detailed summary of what DOE has done organizationally and fiscally to implement the technology transfer initiative.

Answer: Within Defense Programs, the technology transfer function is being reassigned to the Deputy Science and Technology Advisor, who reports directly to the Assistant Secretary for Defense Programs. The staffing for technology transfer within Defense Programs has grown from a staff of two in FY 1990 to seven in FY 1991. Defense Programs has been working with other Departmental elements and other government agencies to find opportunities for collaboration in areas of mutual interest to pool and leverage resources. At the Defense Programs laboratories, the contracts have been modified to incorporate the provisions for the National Competitiveness Technology Transfer Act (NCTTA). Similar modifications for production plants are under consideration. Activities at the laboratories that have been significantly increased include the expansion of the Offices of Research and Technology Application (ORTAs), outreach to potential partners among U.S. industry, and the development of cooperative agreements with private sector partners. In FY 1991, the budget for technology transfer activities at Defense Programs laboratories includes a $20 million line-item for Technology Commercialization and an indirect allocation of up to 0.5 percent from the laboratories' R&D budget, estimated to total approximately $11 million. In response to the Defense Programs' call, the laboratories and other facilities submitted over 60 proposals for joint activities with private sector partners that exceeded by half the available funding in FY 1991.

Question: Can you describe how DOE goes about determining the needs of industry in this program? In other words, what outreach activities will DOE take to let industry know what technology it has, and how does DOE determine how it can best make its technology available to industry for its use?

Answer: Industry needs are determined in a number of ways. Both DP and the laboratories have consulted with a variety of private sector organizations in formulating the program, including representatives of private companies, trade and professional associations, and other groups such as the Manufacturing Forum of the National Academy of Engineering and the Council on Competitiveness. Increased laboratory participation in conferences and seminars, as well as personnel exchanges, also contribute to a greater understanding of industry needs.

Defense Programs' outreach strategy is focused on two levels: national and local. The national level effort is directed to increasing industry awareness of the existence of the Defense Programs Technology Commercialization Initiative, the overall capabilities of the Defense Programs complex, and our interest in working with the private sector. The local effort is aimed at identifying specific technologies and capabilities and the opportunities for industry to participate. In general, the opportunities are available to all interested parties although the proprietary interests of companies will be respected.

In the final analysis, the ultimate measure of success in determining industry needs is their willingness to cost-share the work. Based on industry expressions of support to date, as evidenced by the response to the call for proposals, the program is on the right track.

Question: Would you please provide for the record a list of the technology transfer agreements that DOE has signed?

Answer: At this time two technology transfer agreements have been signed: the Special Metals Processing Consortium at Sandia National Laboratories and the Human Genome project at Los Alamos National Laboratory.

Question: Would you also provide a list of agreements currently pending final approval and signature?

Answer: For the record, I will provide a list of Joint Work Statements (JWS) and Cooperative Research and Development Agreements (CRADA) currently pending final approval and signature. (The information follows):

Facility	Technology Transfer Project	Status of JWS	Status of CRADA
LANL	Continuous Air Monitor	Pending	Pending
LANL	Characterization and Evaluation of Dense Monolithic Superconductors	Pending	Pending
LANL	Development of Advanced DNA Sequencing Technologies	Approved	Approved
SNL	Integrated Circuit Reliability Modeling	Approved	
SNL	Integrated Circuit Reliability Modeling	Approved	
SNL	Intelligent Processing of Assemblies	Approved	
SNL	Physical Security Systems	Approved	
SNL	Physical Security Systems	Approved	
SNL	Integrated Circuit Reliability Modeling	Approved	
SNL	Solvent Reduction	Pending	
SNL	Digital Product Data	Pending	Pending
Y-12	Regional Manufacturing Initiative	Approved	
Y-12	Environmentally Compliant Manufacturing	Pending	

Technology Transfer

Question: How many new agreements does DOE expect to support if the full budget request of $32 million is appropriated?

Answer: During FY 1991, the Defense Programs Technology Commercialization Program budget is projected to support about 35 agreements for collaborative activities between the laboratories and the private sector. Most of these activities are beginning the first year of a multiyear effort and will require follow-on funding in FY 1992. The "mortgage" for projects carried over into FY 1992 is projected to be approximately $20 million, and the remaining budget will support only about 15 additional agreements, depending on the scope and requested funding of the projects. The call for proposals for FY 1992 has been sent to the laboratories, and the actual selection of projects will be decided at the beginning of the fiscal year. Additional impacts on the FY 1992 budget may arise from CRADA partnership opportunities at the laboratories that are independent of the proposal call, but for which funding is currently not allowed from the indirect allocation for technology transfer at the laboratories, or is not available from other sources.

Question: I am pleased to learn that the industry response to the technology transfer initiative has been so positive; that industry is coming to DOE with cash in hand to participate in these joint ventures. How much additional funding would DOE need to support these projects in FY 1992?

Answer: The projects that Defense Programs is initiating in FY 1991 are multiyear activities based on a 50 percent cost-share with the private sector partners. We are committed to continue our cost-share arrangements with private industry in FY 1992 and will require follow-on funding of approximately $20 million. The remainder of the FY 1992 budget will be devoted to initiating new project activities. Based on the significant response to the technology commercialization program in FY 1991, it is anticipated that substantial funding increases in FY 1992 would be fully matched by industry.

Question: What is the largest amount of funding industry has been willing to commit thus far to a consortia effort under this Act?

Answer: The total industry cost-share for FY 1991 activities is projected to be approximately $20 million. This reflects the total amount of resources offered by the private sector partners, including funds, equipment, and in-kind services, for all of the collaborative projects initiated in FY 1991. Many of these activities will involve industry consortia or multiple partner arrangements.

Technology Transfer

Mr. Chairman, the Secretary has put a high priority on this initiative, among the many important issues he has to address. I trust that when the ongoing review of the appropriate missions for the national labs in the post-Cold War period is completed, technology transfer will be given prominence. I believe that this country could do no better to help American business and industry become more competitive than to allow them access to the nation's most significant research and technology development resource--our national labs.

QUESTIONS SUBMITTED BY SENATOR HATFIELD

New Production Reactor Program
Light Water Reactor - Tritium Target Development

It is my understanding that the need for the development of a light water reactor tritium target has always been in terms of a "contingency program." In other words, a tritium target which could be readily adapted to currently existing light water reactor designs if the need arose for accelerated tritium production in case of a national emergency.

While this "contingency" concept may have had some validity in the past, especially after the Savannah River reactors were shut down, I must strongly question the need for such a contingency program under current circumstances. These circumstances include the following three items:

(1) The Department recently distributed the draft EIS on the New Production Reactor program which, if all goes according to schedule, will result in the selection of a final technology and location in December.

(2) I believe that it is the Department's intention to restart the tritium-producing K Reactor at Savannah River this summer.

(3) The General Accounting Office, in its February 1991 report, Nuclear Materials: Decreasing Tritium Requirements and their Effect on DOE Programs, indicated that there has been a dramatic decrease in tritium requirements since 1988, and that DOE now has additional time to make decisions regarding future tritium production needs.

Question: In light of the restart of K Reactor, the progress on the New Production Reactor, and the GAO's finding that there has been a dramatic reduction in tritium requirements, do we really need a light water reactor contingency program any longer--one which was initiated a decade ago when a better case for tritium production could be made?

Answer: The justification for the New Production Reactors (NPR) Program, in its entirety, including the light water reactor contingency, has been based upon providing production capacity for the next century. It is not based upon quantity, but rather the ability to provide what ever quantity the President feels is necessary in the years 2000-2040. The current production reactors, which have been shutdown since April 1988 will be 47 years old when the NPR is scheduled to be operational. On February 27, 1991, Secretary Watkins transmitted a letter to the Comptroller General regarding this issue. In this letter Admiral Watkins states, "The GAO report contains factually incorrect statements and faulty conclusions." Further, the GAO report disregarded the [DELETED] a reserve supply of tritium. The need for a reserve has been clearly demonstrated while the current Savannah River reactors have been shut down and all tritium production has been halted. The maintenance of the light water reactor contingency is now more than ever, a necessity in order to guarantee the existence of assured production capacity to preserve our Nation's nuclear deterrence. Essentially it serves as an insurance policy should any unanticipated technology or siting problems occur in the future.

Question: There already exists a proven tritium target for the heavy water reactor, and I understand that we are very near a final proof test for a tritium target for the MHTGR (Modular High Temperature Gas Reactor). While there may have been a legitimate argument ten years ago for the need to develop a light water target - before the MHTGR target was developed - what is the justification for needing three tritium targets today - especially since tritium requirements have decreased dramatically in the last decade?

Answer: The Department identified the most advanced and reliable technologies for potential tritium production. The environmental impact statement, currently being prepared, is evaluating all three candidate reactor technologies and the three proposed sites. The Department will continue with design and development work on all three technologies until the final EIS is completed. Until that time the Department may make no environmentally significant decisions, such as selecting a reactor technology or choosing to eliminate from consideration one of the technologies. The justification for the New Production Reactors (NPR) Program has always been adequate capacity as opposed to quantity. The NPR will eventually replace the 37 year old Savannah River reactors which have been shut down since April 1988, essentially halting all tritium production for the Nation.

Question: The Department of Energy has been pursuing the development of a light water reactor tritium target since about 1981. Could you please provide the Subcommittee with the amount of money that has been spent on this program since 1981 - including transfers and reprogrammings?

Answer: The Office of New Production Reactors was created in October 1988, subsequent funding for light water reactor tritium target development work, including transfers and reprogramming, will total $54.4 million from FY 1988 through FY 1991.

Question: In addition, please provide the Subcommittee with an estimate of how much additional funding will be necessary, beginning with FY 1992, to complete the development of a light water tritium target.

Answer: The light water reactor tritium target budget request for both FY 1992 and FY 1993 is for $25 million respectively. The light water reactor tritium target development program will be completed in FY 1993.

Question: In 1988, the Energy Research Advisory Board reviewed all the tritium target technologies. The Board determined that full size light water targets would have to be tested under full operating conditions in order to verify specific design. Will the currently proposed light water target tests be sufficient, or will tests have to be done in a currently operating light water reactor to be meaningful? If nothing else, I am very concerned with the implications that this could have on our nuclear non-proliferation treaties.

Answer: There are currently no plans to irradiate light water targets in a commercial light water reactor.

The mission of the LWR Tritium Target Development Plan is to demonstrate and qualify a high-temperature LWR tritium target, with fabrication and extraction processes sufficiently confirmed to ensure a deployable target consistent with production needs. The demonstration and qualification of this technology will include a target rod design data package and performance specification that provide the technical information for analysis and prediction of integrated plant operation so that technical operating specifications and operating procedures can be generated.

Sufficient testing, in DOE's Advanced Test Reactor, of targets will be completed to qualify the target design to the performance specification. The testing is being accomplished in pressurized water reactor conditions.

Additionally, sufficient other testing will be completed to verify the thermal, hydraulic and mechanical stability and reliability of integrated target and fuel assemblies in a hydraulic testing facility. This testing also will be conducted at pressurized water reactor conditions of temperature, pressure, water chemistry and water flow.

As a result, testing of an integrated target and fuel assembly in a commercial light water reactor are not planned.

New Production Reactor Program
Light Water Reactor - Tritium Target Development

Question: On page 382 of your FY 1992 budget justification, it indicates that your total request for tritium target development is $46 million dollars. On that same page, under the heading "Major Laboratory and Facility Funding," the request for the Richland Operations Office is $25,485,000. Is the entire $25,485,000 for Richland all related to the development of the light water tritium target?

Answer: Of the $25,485,000 shown under Richland Operations Office, $25,000,000 is for the development of the light water tritium target. The balance of funds, $485,000, is to complete Environmental Impact Statement related tasks at Pacific Northwest Laboratory and Westinghouse Hanford Company.

Question: On page 381 of your FY 1992 budget justification, a sentence appears saying the "Program Direction" funding for New Production Reactors includes substantial travel costs to all three proposed reactor sites (Savannah River, Idaho and Richland). Please provide the amount budgeted for travel to Richland under "Program Direction," and a breakdown of proposed expenditures at Richland under all the remaining program activities (Program Support, Safety Review Process, Environmental Compliance, etc.)

Answer: A breakdown of the proposed FY 1992 funding for Richland, including travel expenditures under the Program Direction line, is summarized in the following table. (The information follows:)

Activity	$
Confirmatory Development	$ 0
Tritium Target Development	25,000,000
Conceptual Design	0
Environmental Compliance	485,000
Safety Review Process	0
Program Support	0
Program Direction (Travel)	57,600
Total Operating Expenses	$25,542,600
Capital Equipment	0
Construction	0
Total Funds at Richland	$25,542,600

Materials Production
PUREX Processing Plant

In the Senate Report on the FY 1991 Energy and Water Development Appropriations Bill, language was included which gave the Department specific direction regarding the PUREX processing plant at Hanford. Included in that language were the following items:

- The Department should consider the completion of an EIS prior to reopening the facility.
- Operation of the facility should not be resumed until completion of an independent safety review by the Defense Nuclear Facilities Safety Board.
- The Department should undertake a comprehensive assessment, with independent oversight, which explores all the available options, including long-term interim storage and direct disposal, and other such options that would not require operation of PUREX or an oxidation facility.
- The Committee also disapproved of the Department's transfer of PUREX to the waste management program.

Question: Please provide the Committee with an update on the activities surrounding the PUREX facility, specifically recounting all activity relating to the four above items.

Answer: Since Senate consideration of the Department's FY 1991 budget request, the Secretary has determined that the PUREX plant does not need to operate in support of weapons program plutonium requirements. In October 1990, the Secretary also announced that the Department would prepare an Environmental Impact Statement (EIS) that addresses options for disposal of the inventory of Hanford spent fuels. PUREX operation will be included in these options. We have no current plans to operate the PUREX plant unless, at the completion of EIS analyses, it is selected as the preferred safe and environmentally acceptable disposition alternative for Hanford spent fuels.

In accordance with established Departmental policies, PUREX would not be restarted for a waste management mission without first assuring our ability to operate safely. As with other restart efforts, the Department anticipates that several reviews conducted by internal organizations (such as the Office of Nuclear Safety) and external organizations (such as the Advisory Committee for Nuclear Facility Safety or the Defense Nuclear Facilities Safety Board) would be conducted before PUREX operations were resumed.

Based on our decisions not to restart PUREX in support of the weapons program and our subsequent decision to prepare an EIS, we understand from discussions held with Senate Appropriations Committee staff that the committee has withdrawn its objections to the transfer of PUREX to the Office of Environmental Restoration and Waste Management. This transfer is on schedule to take place in the fourth quarter of FY 1991.

Weapons Complex Reconfiguration

It is my understanding that the Department has included $42 million in its FY 1992 budget for its Weapons Complex Reconfiguration Initiative. While I applaud the Department's intention to modernize and reduce the size of the nation's nuclear weapons production facilities, I was disturbed to learn that the Hanford Reservation is a candidate site for some of the proposed consolidated operations.

Question: In light of the fact that the major activities slated for Hanford in the foreseeable future are related to waste clean up under the Environmental Restoration and Waste Management Program, why is Hanford now being considered as a site for future defense production activities?

Answer: The Department of Energy's Weapons Complex Reconfiguration Initiative is a process stretching over several years and beginning with the preparation of a Programmatic Environmental Impact Statement as required by the National Environmental Policy Act (NEPA). The Department of Energy must examine reasonable alternative approaches to reconfiguration. To avoid prejudicing the viability of any alternative, this analysis will include an alternative to place new weapons facilities at the Hanford Reservation.

Question: How much weight will local public acceptance and regional Congressional support be given during the site selection process for the consolidation?

Answer: In the process of preparing the Programmatic Environmental Impact Statement, a variety of criteria and concerns will be considered, including socioeconomic factors such as public acceptance at the regional, state, and local levels. In the absence of issues that might be judged as disqualifying a particular site from further consideration, all criteria will be considered in any decision about the future configuration of the complex.

Question: How much of the budgeted $42 million do you intend to spend on investigating the potential of the Hanford site?

Answer: Of the $42 million budgeted for FY 1992, $17 million is to support the development of a capital asset management process and condition assessment surveys for the entire nuclear weapons complex. The remaining $25 million is not apportioned by location, however, only a very small portion will be spent on direct investigations of the Hanford Reservation. The deletion or addition of the Hanford Reservation to the list of alternatives has little effect on the overall level of effort.

SUBCOMMITTEE RECESS

Senator **DOMENICI.** I understand that we are going to recess, according to the chairman's request, until May 9 at 2 o'clock, to receive testimony on the Corps of Engineer's budget.

[Whereupon, at 3:55 p.m., Tuesday, May 7, the subcommittee was recessed, to reconvene at 2 p.m., Thursday, May 9.]

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 1992

THURSDAY, MAY 9, 1991

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 2:22 p.m., in room SD–192, Dirksen Senate Office Building, Hon. J. Bennett Johnston (Chairman) presiding.

Present: Senators Johnston, Nickles, Burdick, Hatfield, and Byrd.

DEPARTMENT OF THE ARMY—CIVIL

CORPS OF ENGINEERS—CIVIL

STATEMENT OF G. EDWARD DICKEY, ACTING PRINCIPAL DEPUTY ASSISTANT SECRETARY OF THE ARMY FOR CIVIL WORKS

ACCOMPANIED BY:

- **LT. GEN. HENRY J. HATCH, CHIEF OF ENGINEERS**
- **MAJ. GEN. ARTHUR E. WILLIAMS, ACTING DIRECTOR OF CIVIL WORKS**
- **MICHAEL E. STRACHN, ACTING CHIEF, CIVIL WORKS PROGRAMS DIVISION**

OPENING REMARKS

Senator JOHNSTON. Good afternoon, General Hatch, Dr. Dickey, ladies and gentlemen. This afternoon, the subcommittee continues hearings on the 1992 budget request for the Federal energy and water development programs. Today, the subcommittee will review Corps of Engineers' budget for fiscal 1992. We are pleased to have with us Dr. Edward Dickey, Acting Principal Deputy Assistant Secretary of the Army for Civil Works, and Lt. Gen. Hank Hatch, Chief of Engineers. We welcome you.

Dr. Dickey, I understand that both you and General Hatch have brief oral remarks. Your full written statements will be put in the record, after which we will proceed with questions.

So please proceed, Dr. Dickey.

OVERVIEW OF FISCAL YEAR 1992 CIVIL WORKS BUDGET

Dr. DICKEY. Thank you very much, Mr. Chairman. It is a pleasure to be here this afternoon. I might point out that General Hatch and I are accompanied by Maj. Gen. Arthur E. Williams, the Acting

Mr. Chairman, the President's proposed fiscal year 1992 budget reflects the administration's support for the protection and restoration of the environment and for improvement of the Nation's infrastructure. This budget, following enactment last fall of the third successive biennial Water Resources Development Act, underscores the administration's strong commitment to sound, environmentally sensitive water resources development.

The budget for the Civil Works Program totals $3.77 billion. This represents a 6-percent increase over the funding level for fiscal year 1991. The budget is composed of $2.86 billion in general fund revenues, $685 million derived from trust fund receipts, and $229 million in non-Federal contributions. In combination, the trust fund receipts and non-Federal contributions make up 24.2 percent of the civil works budget.

ENVIRONMENTAL PROTECTION AND RESTORATION

Attached to my complete statement is a table highlighting new and continuing environmental initiatives funded at $86 million in the fiscal year 1992 budget. Let me mention a few of the highlights:

A total of $1.9 million is budgeted to initiate nine reconnaissance studies with emphasis on restoration of the environment; an amount of $400,000 is included in the research and development program to begin a study of the economic impacts of global climate change as part of governmentwide attention given to climate change issues in the President's 1992 budget; $7 million is included in the "Operation and maintenance, general" account to participate with other Federal agencies and coastal States in a coastal America partnership which sets forth an innovative, comprehensive plan to coordinate Federal programs and to integrate actions with State, local and nongovernmental efforts; $1 million is requested to initiate a 2-year effort to develop a wetlands action plan and demonstration program, authorized by section 307 of the Water Resources Development Act of 1990. This program would focus on development of methods and procedures for establishing a Wetlands Mitigation Banking Program; $7.5 million is included for modifications to existing projects in the interest of the environment; $7 million is budgeted to continue construction of three fresh water diversion projects to restore Louisiana's coastal wetlands. You, of course, are familiar with those, Mr. Chairman. They include the Caernarvon, Bonnet Carre, and Davis Pond projects; and, finally, $32 million is budgeted for the Columbia River juvenile fish mitigation at six existing locks and dams.

The recently completely salmon summit has expanded the Army's juvenile fish mitigation activities in 1991 and is expected to necessitate modifications in the proposed program for 1992. The Army's actions, resulting from the salmon summit, have taken the Corps' effort beyond the construction of bypass facilities to implementation in 1991 of a series of additional measures to aid the migration of adult and juvenile salmon on the Columbia and Snake Rivers. Careful monitoring of the success of these actions will provide a basis for the development of a future program.

As we proceed to implement further measures in 1992, tradeoffs will need to be made between restoration of fish runs and other uses of the river and upstream reservoirs such as for flood control, hydropower, navigation and irrigation. Our goal is to assure that the tradeoffs are made with the benefit of the best possible information and, to that end, we have initiated studies of system operation, the cost and effectiveness of different restoration strategies, and other related matters so that these decisions will be based on sound hydrologic, engineering, environmental, and socioeconomic information.

INFRASTRUCTURE IMPROVEMENT

Turning now to infrastructure improvement, the fiscal year 1992 budget reflects the administration's commitment to developing and maintaining the Nation's infrastructure by including $54 million to initiate construction on five project new starts and six major rehabilitation new starts.

The total Federal cost of the five project new starts is $1.1 billion, of which $535 million would be derived from the inland waterways trust fund. The six major rehabilitation new starts carry a total Federal cost of $102 million. One-half the cost of five of these projects, which are associated with the inland locks and dams, would be derived from the inland waterways trust fund.

NEW MAJOR REHABILITATION PROJECTS

Beginning in fiscal year 1992, new major rehabilitation projects are proposed for funding in the "Construction general appropriation" account. This emphasizes the importance of caring for existing facilities and recognizes that major rehabilitation and project new starts will have to compete directly for resources in the future.

The budget includes funding for eight preconstruction engineering and design new starts for flood control, storm damage reduction, and commercial navigation projects. In addition, a private sector partnership special study and demonstration program is intended to identify opportunities for greater private sector involvement in the development and operation of environmental services infrastructure.

ONGOING ACTIVITIES

We note that, in addition to funding the new construction work program, the fiscal year 1992 construction general budget of $1.222 billion is to continue, with a number of exceptions, ongoing projects including 15 initiated in 1991.

The budget includes $30.2 million for the continuing authorities program, $20 million of which would be used for the section 205 small flood control projects. In order to direct limited Federal resources to projects that are more clearly beyond the scope of the ability of local communities to pursue without Federal participation, the continuing authorities programs other than the section 205 program are proposed to be phased out.

The fiscal year 1992 operation and maintenance, general, budget of $1.515 billion reflects a commitment on the part of the Army to place relatively greater emphasis on the maintenance of Federal facilities. This commitment is reflected in the "Operation and maintenance, general" account in that all increases beyond estimated inflation are for increased maintenance rather than for enhancement of operations.

Reflecting the Army's commitment to the protection and wise management of the Nation's water resources including wetlands, the fiscal year 1992 budget includes $86 million for the Regulatory Program. This is an increase of 14.7 percent over the $75 million level available in 1991. In order to improve our ability to respond to the public in a timely manner, the Corps is taking steps to increase its regulatory staff within its overall personnel ceiling by some 25 percent by the end of fiscal year 1993.

REORGANIZATION OF CORPS OF ENGINEERS

Before concluding, let me just mention the question of reorganization of the Corps. The Fiscal Year 1991 Energy and Water Development Appropriations Act directed the submission of a conceptual study on the Corps' organizational structure. Events of the past year emphasized not only the foresight of the initiative for the conceptual study, but also the need for organizational change. The Corps developed a reorganizational proposal for inclusion in the Department of Defense's base closure and realignment submission. However, while supporting the need for Corps reorganization, the Department of Defense felt that the dual missions of the Corps—civil and military—and the differing committee jurisdictions over the Corps—Public Works and Armed Services—argued in favor of separate legislation with respect to the Corps.

The Secretary of Defense, in his press conference of April 12, 1991, said separate, freestanding legislative recommendations would be sent to the Congress for the Corps. The Department of Defense is currently reviewing possible options for accomplishing the reorganization.

CONCLUSION

In conclusion, Mr. Chairman, I wish to emphasize our support for the President's 1992 budget in its dual focus on protection and restoration of the environment and on improvement of the Nation's infrastructure. We hope that the subcommittee will be able to support this budget.

Mr. Chairman, this concludes my statement.

[The statement follows:]

STATEMENT OF G. EDWARD DICKEY

INTRODUCTION

Mr. Chairman and members of the subcommittee, I am pleased to be testifying before this Subcommittee today on the proposed FY (FY) 1992 budget for the Civil Works Program of the Army Corps of Engineers. The Honorable Robert W. Page retired from Government service October 16, 1990, and I am serving as the Acting Principal Deputy Assistant Secretary of the Army (Civil Works). Assisting me are the Chief of Engineers, Lieutenant General Henry J. Hatch; the Acting Director of Civil Works, Major General Arthur E. Williams; and the Acting Chief of the Civil Works Programs Division, Mr. Michael E. Strachn.

My statement covers the following topics: Overview of the President's FY 1992 Civil Works budget; environmental protection and restoration; infrastructure improvement; ongoing work in the FY 1992 Civil Works budget; major activities in support of other agencies; and Corps of Engineers organizational structure.

In discussing these topics, the significant provisions of the Water Resources Development Act (WRDA) of 1990, Public Law 101–640, and other recent authorizing legislation, will be emphasized in order that the relationship between the legislation and the proposed FY 1992 budget may be clearly understood.

The Chief of Engineers has a statement which complements mine, providing additional details on the FY 1992 budget for the Civil Works program.

OVERVIEW OF THE PRESIDENT'S FY 1992 CIVIL WORKS BUDGET

The budget reflects the Administration's support for protection and restoration of the environment, for improvement of the Nation's infrastructure through construction and rehabilitation of facilities for commercial navigation and flood control, and for efficient management of Corps of Engineers operated and maintained navigation systems and reservoirs. This budget, following enactment last fall by Congress of the third successive biennial WRDA, underscores the Administration's strong commitment to sound, environmentally sensitive water resources development

The proposed FY 1992 budget for the Civil Works Program totals $3.77 billion. This represents a 6 percent increase over the funding level for FY 1991. The budget, as shown in Table A, attached, is composed of $2.86 billion in general fund revenues; $685 million derived from trust fund receipts; and $229 million in non-Federal contributions. In combination, the trust fund receipts and non-Federal cash contributions make up 24.2 percent of the Civil Works budget. The non-Federal cash contributions are further supplemented by provision of lands, easements, rights-of-way, relocations and dredged material disposal areas (LERRDs).

The focus of the FY 1992 budget is on protection and restoration of the environment and on improvement of the Nation's infrastructure. Highlights of new initiatives and of continuing and expanded efforts in FY 1992 are discussed below and are listed in Table B, attached.

Environmental Protection and Restoration

NEW ENVIRONMENTAL INITIATIVES

New environmental initiatives are proposed at an estimated total Federal cost of $23 million, of which $10.3 million is in the FY 1992 budget.

New studies and research.—The FY 1992 budget includes $1.9 million to initiate 9 new reconnaissance studies with a primary emphasis on restoration of the environment. The research and development (R&D) program includes $400,000 to initiate a study of the economic impacts of global climate change through the R&D program. This is part of the Government-wide attention given to climate change issues in the President's FY 1992 budget. Also included is $500,000 for implementation of the R&D activity, authorized in 1990 by the Nonindigenous Aquatic Nuisance Species Act, to prevent and control infestation of the coastal inland waters of the United States by developing cost effective and environmentally sound methods for controlling the zebra mussel and other nonindigenous aquatic nuisance species. The Army will continue to be an active participant in the interagency Aquatic Nuisance Species Task Force.

Coastal America Partnership.—The budget for Operation and Maintenance, General, (O&M) includes $7 million to participate with other Federal agencies and coastal States in a Coastal America Partnership, which provides for a high degree of cooperation among Federal agencies with principal responsibilities for coastal resources. This interagency initiative will address three major problems common to coastal regions: loss and alteration of fish and wildlife habitat, pollution from nonpoint sources, and contaminated sediments. To address these problems, Coastal America sets forth an innovative approach to the protection and restoration of coastal resources through a series of site-specific projects, to be undertaken in cooperation with State, local and nongovernmental efforts.

Wetlands demonstration.—The budget for O&M also includes $1 million to initiate a 2-year effort to develop a Wetlands Action Plan and Demonstration Program, authorized by Section 307 of WRDA 1990. This effort would develop an action plan that identifies actions that could be taken by the Army in achieving the goals of protecting and enhancing wetlands. The plan would focus, in particular, on development of methods and procedures for establishing a wetlands mitigation banking program. It is expected that 2 demonstration sites would be identified for authorization and implementation in FY 1993.

CONTINUING ENVIRONMENTAL INITIATIVES

Columbia River juvenile fish mitigation.—Funding of nearly $32 million is budgeted for Juvenile Fish Mitigation at 6 existing Columbia River basin locks and dams. This includes $8 million that is budgeted, for the first time in FY 1992, for design and construction of bypass facilities at Ice Harbor and The Dalles. The total Federal cost of bypass facilities at the 6 dams is estimated at $250 million.

Salmon summit.—The Army's actions resulting from the recently completed Salmon Summit have taken the Corps' effort beyond the construction of by-pass facilities to implementation in 1991 of a series of additional measures to aid migration of adult and juvenile salmon on the Columbia and Snake Rivers. These actions include releasing water from Dworshak Reservoir to assist migration in April and May, lowering reservoir pools to increase flow velocities to speed the downriver migration of juveniles, and continuing the fish transportation program. Careful monitoring of the success of these actions will provide a basis for the development of a future program. Further measures will be proposed for 1992.

As we proceed to implementation of measures in 1992, tradeoffs will need to be made between restoration of fish runs and the other uses of the river and upstream reservoirs, such as flood control, hydropower, navigation, and irrigation. We will cooperate with all affected agencies and interests in reaching decisions on these difficult issues. Our goal is to assure that those tradeoffs are made with the benefit of the best possible information. Toward that end, we have initiated studies of system operation, the cost and effectiveness of different restoration strategies, and other related matters so that these decisions will be based upon sound hydrologic, engineering, environmental, and socio-economic information.

Modifications of existing projects.—The budget includes $7.5 million for modifications to existing projects in the interest of the environment under authority of Section 1135(b) of Public Law 99–662, as amended. This is triple the level of funding provided for FY 1991, and would be used to complete modifications initiated in FY 1991, as well as to identify and implement additional modifications. To date, I have authorized initiation of report preparation for 24 proposed Section 1135 projects to improve fish and wildlife habitat associated with completed projects. Most recently, on April 19, I authorized initiation of report preparation for a proposed Section 1135 project at Savannah Harbor. The current proposal involves deactivation of the tide gate and closure of the channel connecting the Back and Front Rivers at an estimated cost of $2 million. These changes will aid the restoration of historic salinity levels in the Savannah National Wildlife Refuge and prevent the movement of striped bass eggs and larvae from spawning areas in the Back River to the Front River.

Cooperative agreement to improve fish habitat.—Under a Cooperative Agreement executed on January 31, 1991, between the Departments of Commerce and Army, Civil Works activities will be coordinated with the National Marine Fisheries Service in order to identify and implement features within current project and program authorizations to restore and create fish habitat.

Louisiana Coastal Wetlands Conservation and Restoration Task Force.—The FY 1992 program includes $34 million, in a new Coastal Wetlands Restoration Trust Fund, to carry out provisions of the recently enacted Coastal Wetlands Planning, Protection and Restoration Act. That act authorized a unique interagency, inter-governmental program to address problems associated with coastal wetlands, and it established a dedicated source of funding, available without further appropriation, for activities authorized in the act. Among other things, it directed the Army to convene a task force to identify the priority coastal wetland restoration projects which can be completed within a 5-year period; to develop a long-term wetlands restoration plan; to oversee the funding of these priority projects with amounts available to the task force; and to evaluate the scientific effectiveness of the program. Beginning in FY 1992, funding to support the task force activities is to be transferred to the Army annually from the Sport Fish Restoration Fund in the Department of the Interior. Authority was provided in the recent Dire Emergency Supplemental Appropriations Act to apply $300,000 from appropriations for General Investigations to support task force activities during FY 1991.

On December 11, 1990, members of the task force were notified that the Army's authority to chair the task force had been delegated to the Corps' New Orleans District Engineer. The first task force meeting was convened on January 11, 1991. Technical subcommittee meetings are scheduled for mid-May and the second task force meeting is scheduled for mid-June.

STATEMENT OF NEW ENVIRONMENTAL APPROACHES

Environmental restoration is accorded the status of a priority project output in the FY 1992 budget. The Corps will strive to operate and maintain existing projects to contribute to fish and wildlife restoration while maintaining authorized levels of project purposes. In planning new projects, full consideration is given to restoration of environmental values and to implementation concurrently with construction of justified mitigation of unavoidable adverse environmental effects.

In a policy adopted last June for implementation of the President's environmental goals by the Corps of Engineers, Civil Works funds are to be used, as budgeted and provided by Congress, for justified, cost shared proposals which restore environmental values to modern historic levels in situations (1) where a Civil Works project has contributed to their degradation or (2) where the restoration can be most cost effectively accomplished through modification of an existing Civil Works project. The full text of the Army's Statement of New Environmental Approaches is attached.

The principles being followed are in accordance with the spirit of Section 306 of WRDA 1990, which established environmental protection as a mission of the Corps. While Section 306 provides no new authority to undertake the construction or implementation of specific measures, it does make clear the necessity to ensure full consideration of environmental protection in all Civil Works activities.

INFRASTRUCTURE IMPROVEMENT

NEW INFRASTRUCTURE INITIATIVES

The FY 1992 budget includes $54 million to initiate construction work in two categories, project new starts and major rehabilitation new starts. The total Federal cost of this new construction work is $1.21 billion, including $577 million to be derived from the Inland Waterways Trust Fund. Non-Federal sponsors will contribute $35 million in cash, as well as LERRDs, toward the implementation of this new work. Table C, attached, provides a listing of new construction work in the fiscal year 1992 budget.

Project new starts.—Five project new starts are proposed with a total Federal cost of $1.1 billion, of which $535 million would be derived from the Inland Waterways Trust Fund to pay one-half the cost of a project new start on the Inland Waterways System. The other new starts include one flood control project, one storm damage reduction project, and two commercial channel and harbor projects.

Major rehabilitation new starts.—Six major rehabilitation new starts are proposed at a total Federal cost of $102 million. Five of these major rehabilitation projects are associated with inland waterway locks and dams. One-half of the cost of these five projects, $42 million, would be derived from the Inland Waterways Trust Fund. Beginning in FY 1992, new major rehabilitation projects are proposed for funding in the Construction, General, appropriation account. Previously initiated major rehabilitation projects will be completed with funding in the Operation and Maintenance, General, appropriation account, where they have been budgeted in recent years. Budgeting major rehabilitation under Construction, General, emphasizes the importance of caring for existing facilities and recognizes that major rehabilitation and project new starts will have to compete directly for resources in the future.

Three categories of work have been established to define the major rehabilitation program: reliability, modernization, and scale economies. The six proposed major rehabilitation new starts are classified as infrastructure projects under one or more of these categories. The reliability classification addresses the more traditional problem where reduced levels of service and the associated benefits are anticipated unless corrective measures are initiated during the budget year. Major rehabilitation addressing reliability problems would be proposed if the cost of corrective measures at a specific project feature is estimated to be at least $5 million or represents 20 percent of replacement cost for that feature. A major rehabilitation for modernization purposes would provide for a significant reduction in estimated future O&M costs or increased user benefits and would involve a capital investment of $1 million or more. Rehabilitation for modernization purposes could be proposed even though the project is not necessarily experiencing any appreciable reliability problems. The third classification, scale economies, allows for rehabilitating a package of features at a substantially lower cost than if each were accomplished separately. The total package must cost at least $10 million for qualifying projects, and could include nonrecurring work at more than one site or at a combination of project features.

Activities that fall below the threshold for major rehabilitation would be considered and budgeted for as maintenance in the O&M program.

Other infrastructure initiatives.—The budget includes funding for 8 preconstruction engineering and design (PED) new starts for flood control, storm damage reduction and commercial navigation projects. In addition, the budget proposes to initiate a Private Sector Partnership special study and demonstration program of opportunities for greater private sector involvement in the development and operation of environmental services infrastructure, such as water and waste water treatment plants and solid waste management, with a goal of identifying profitable, self-sustaining solutions to the need for these environmental services by Federal facilities and local communities. In his statement, the Chief of Engineers will report on the status of recent discussions between the Corps and the Environmental Protection Agency (EPA) on how this initiative and EPA's Public-Private Partnership program complement each other in facilitating private sector participation in the provision of environmental services.

Section 310(a) of WRDA 1990 authorizes the establishment of a Technical Advisory Committee to provide recommendations for monitoring and options for research for major Corps reservoirs. The FY 1992 budget includes $100,000 to initiate actions to establish this Committee and issue regulations, required by Section 310(b), providing significant opportunities for public participation, including public hearings, in developing or revising reservoir operating manuals.

ABILITY TO PAY PROCEDURES

WRDA 1986 directed that the Secretary of the Army establish certain cost sharing relief based on the lack of a sponsor's ability to pay the normal non-Federal share of flood control and agricultural water supply project costs. Section 305 of WRDA 1990 modified the original authority in several important ways. The proposed new rule, which is to be in place not later than November 28, 1991, currently is receiving final Administration review prior to publication in the Federal Register.

CONTINUING INFRASTRUCTURE INITIATIVES

Infrastructure improvement highlights of the ongoing program include $2.5 million to continue the Army's effort to develop a Federal Infrastructure Strategy, $8 million to continue the Magnetic Levitation Transportation Pilot Study, and $4.5 million to continue the Construction Productivity Advancement Research program.

ONGOING WORK IN THE FY 1992 CIVIL WORKS BUDGET

CONTROLLING COSTS AND MAINTAINING SCHEDULES

A year ago, approximately half of the projects budgeted for construction had cost estimates higher than in FY 1990, and a comparable number of project schedules had slipped. This was not considered to be a satisfactory performance.

The FY 1992 budget reflects some improvements in both cost estimating and scheduling. About 30 percent of the projects have increased in cost beyond the adjustments that were made to reflect the new inflation factors projected by the Office of Management and Budget. The project cost increases were generally of a lesser magnitude per project than in past years. There has been slightly less improvement in adhering to schedules. Approximately 38 percent of last year's schedules had to be extended.

This progress, modest as it is, can be attributed primarily to improvements made through the project management system adopted in 1988, along with a more sophisticated cost estimating system that has been developed for Civil Works projects. However, this is still not satisfactory, and more attention is being focused on the Corps schedule performance. Two key factors in improving schedule performance will be to apply even greater pressure during the review process to eliminate sequential reviews and to instill a greater sense of realism in recognizing the time required to accomplish various elements of work.

CONSTRUCTION, GENERAL

The FY 1992 Construction, General, budget of $1.222 billion includes $54 million to fund the new construction work program discussed previously and would continue, with a number of exceptions, ongoing projects, including 15 initiated in FY 1991.

The construction program has been surveyed to determine whether currently approved cost estimates for any projects under construction would exceed the cost increase ceiling imposed by Section 902 of WRDA 1986. At this time, one project has been identified that will exceed its Section 902 ceiling and, thus, requires reauthorization. A Post Authorization Change Report is under review in Washington for that project. The Army's legislative program for the next biennial authorization act, WRDA 1992, could propose reauthorization of this project. In the interim, construction will proceed on schedule. Several other projects are being closely monitored that have the potential for Section 902 ceiling problems, in part due to the cost of future beach nourishment cycles; reporting and reauthorization requirements for those projects will be addressed if the problems materialize.

Continuing authorities program.—The budget includes $30.2 million for the Continuing Authorities program, $20 million of which would be for Section 205 small flood control projects. In order to direct limited Federal resources to projects that are more clearly beyond the ability of local communities to pursue without Federal participation, continuing authorities programs other than the Section 205 program are proposed to be phased out. This would be accomplished in an orderly process, and all projects which previously have been approved for inclusion in the construction program would be funded through completion of construction. For the Section 14 emergency streambank and shoreline erosion control program, the phase out plan would continue, through construction, nearly 350 projects for which a feasibility study already has been initiated, provided that the projects meet program criteria, are justified, and have local sponsors willing and able to share project costs.

With the passage of the Dire Emergency Supplemental Appropriations Act, all Continuing Authorities program activities are being resumed in FY 1991. Because the FY 1992 budget does not include follow-on funds for these efforts, each study or project resumed or initiated will be fully funded with FY 1991 appropriations.

OPERATION AND MAINTENANCE, GENERAL

The FY 1992 Operation and Maintenance, General, budget of $1.515 billion reflects a commitment on the part of the Army to place relatively greater emphasis on the maintenance of Federal facilities. This commitment is reflected in the Operation and Maintenance, General, account in that all increases beyond estimated inflation and salary increases over the level of FY 1991 appropriations are for increased maintenance, rather than for enhancement of operations.

St. Georges Bridge.—The budget includes $14 million to reimburse the State of Delaware for construction of a replacement bridge and approaches over the Chesapeake and Delaware Canal at St. Georges, Delaware, at no cost to the State. The replacement bridge was authorized by WRDA 1990, including the authority to reimburse the State. Initial funding of $7 million was appropriated in the FY 1991 Energy and Water Development Appropriations Act. The budget anticipates programming $14 million annually until the State is fully reimbursed.

Wynoochee Lake land transfer.—The FY 1992 budget includes $100,000 to complete the transfer of lands under the jurisdiction of the Army for operation of the Wynoochee Lake project to the city of Wynoochee, Washington as authorized by Section 203 of WRDA 1990. This transfer is subject to a number of conditions, including a requirement that the city agree to operate and maintain the project consistent with its authorized purposes. In addition, no transfer can be made until the city has demonstrated that it can operate and maintain the project. On July 1, 1990, the city assumed responsibility for operating and maintaining this project, in accordance with agreements made as a result of Section 4(t) of WRDA 1988. Since that time, we have been monitoring the city's activities. We intend to initiate actions to transfer title in FY 1991 and to complete transfer during FY 1992.

Recreation pilot test.—In August, 1989, the Assistant Secretary of the Army for Civil Works chartered a Task Force in the Corps of Engineers to conduct a comprehensive, nationwide study to identify new approaches that would "maintain and enhance public recreational opportunities at Corps projects while reducing Federal costs for development and operation of recreational facilities."

The Task Force report, completed in September 1990, identified some 93 different options toward that end. Major groupings included Revenue Enhancements, Resource Augmentations, Non-Federal Involvement, and Private Involvement. The Corps of Engineers has established a new Task Force to follow up on the Comprehensive Report generally.

A "Pilot Test" would relate only to "Non-Federal Public Involvement," that is, greater participation by States and local agencies, to the extent they might be interested in doing so. During the Comprehensive Study, the Corps wrote all 50 Governors about this possibility. Most responded and some made innovative suggestions. State and local agencies already operate 1,854 recreational areas at 459 Corps projects nationwide. The Pilot Test, if initiated, would seek to enlarge that participation.

Last January, I wrote to the governors of five states, asking if they would be interested in meeting with us to discuss possibilities of transfers of some number of Corps-operated recreation areas to states (or other local public agencies) with certain incentives. Depending on their responses, a one-year Pilot Test with one or two states could be initiated to see what might be accomplished. Arkansas, Texas and

Kansas replied they would like to meet with us, but made no commitments. Iowa and Missouri said they were not interested.

Incentives to the states would consist of reasonable financial assistance, possible changes in Corps rules and policies affecting state operations and possible operational efficiencies (e.g., exchanges). Financial incentives include renovations and/or upgrades of existing facilities at Federal expense, or payments for operational costs for a limited number of years, or whatever reasonable combination might be negotiated.

At the exploratory meeting in Austin, on April 16, Texas representatives said the state is very much interested in a Pilot Test, provided negotiations could proceed without conditions. At a similar meeting the next day in Little Rock, Arkansas representatives said the state does not wish to pursue a Pilot Test. We expect to meet with Kansas representatives as soon as a meeting can be arranged.

In any case, the present level of service to the public will be maintained, Pilot Test or not.

FLOOD CONTROL, MISSISSIPPI RIVER AND TRIBUTARIES

The budget includes $347 million for the Mississippi River and Tributaries program. This amount is distributed as follows: $2 million for investigations, $224 million for construction, and $121 million for maintenance. Included in this level of funding are several ongoing projects for the restoration of Louisiana's coastal wetlands, continuation of the Yazoo Backwater mitigation project, and continuation of the reformulation report on the Upper Yazoo Basin project.

REGULATORY PROGRAM

The Army is committed to the protection and wise management of the Nation's water resources, including wetlands. Reflecting this commitment, the FY 1992 budget includes $86 million for the Regulatory program, an increase of 14.7 percent over the $75 million program level in FY 1991.

Mr. Chairman, as I testified at the March 11, 1991, hearing before your subcommittee, efforts are underway to strengthen the existing program to protect, maintain and restore wetlands. At the same time, the Army continues to look for innovative ways to reduce unnecessary duplication and delays that may be associated with the regulatory program. For example, on April 10, 1991, we published proposed revisions to our nationwide permit program, and we are in the process of reviewing and clarifying the interagency wetland delineation manual. We are also committed to reviewing our program guidance and interagency agreements, with a renewed interest in minimizing duplication and delay.

Despite the expanded use of general permits, which now authorize about 40,000 actions annually, the Corps continues to receive approximately 15,000 applications annually for individual permits. While many recent program improvements have been undertaken and recent funding levels have more than kept pace with inflation, it remains true that the Army is concerned with its ability to respond to the needs of the public in a timely manner. Many of the problems associated with the regulatory program can be attributed to limited personnel. In this regard, the Corps is taking steps to increase its regulatory staff, within the existing overall personnel ceiling for the Army Civil Works program, by 25 percent by the end of FY 1993.

GENERAL INVESTIGATIONS

The budget for the General Investigations program is $160 million. In addition to funding the program of new studies and preconstruction engineering and design (PED) projects discussed earlier, this amount would continue more than 170 surveys and 86 PED projects and would fund first year PED for projects proceeding from cost shared feasibility studies. We are pleased to report that nearly all the feasibility studies in the FY 1992 budget are cost shared, except those studies associated with the Inland Waterway System. The FY 1992 budget includes $4.5 million to continue the cost shared program for Construction Productivity Advancement Research.

Passaic River mainstem flood control project.—The budget includes $5 million for continued preconstruction engineering and design (PED) on the Passaic River Mainstem project. The Governor of New Jersey, the Honorable James J. Florio, was informed on February 4, 1991, that, in order to be assured of the project's responsiveness to local sensitivities and to ensure that the project schedule reflects the willingness of the state to finance its share of construction costs, the state would be expected to participate in financing the $51 million balance of PED costs in the same ratio as its overall project cost sharing requirement.

SUPPORT FOR OTHERS

The Corps' largest mission in its Support for Others program continues to be assistance to the Environmental Protection Agency (EPA) in its Superfund program. Superfund activities carried out by the Corps are primarily design, construction management, real estate assistance, technical assistance, and oversight assistance on responsible party activities. This program has stabilized in the range of $200 to $250 million annually in obligations. The Army continues to receive strong support from the Office of Management and Budget in ensuring that the Corps workforce is available to carry out assignments from EPA properly. Other support to EPA includes long-established assistance in the Construction Grants program.

The Army is also assisting EPA in its support to Eastern European democracies, primarily in procuring, shipping, and monitoring the installation and testing of water supply and waste water treatment equipment for the city of Krakow, Poland. Corps personnel will assist in training city employees to take over operation and maintenance. A ceremony was held in Krakow on April 27, 1991, to dedicate the installation of this equipment.

Last July the Army and the Department of Energy (DOE) entered into an umbrella agreement for Corps divisions to offer environmental restoration support to the DOE Operations offices. Since then, two new subagreements have been signed, one in July between the Corps North Pacific Division and DOE's Hanford Facility and the other in November between the Ohio River Division and DOE's Oak Ridge National Laboratory. The Corps is also working with DOE by providing facilities and engineering services to a number of DOE installations.

CORPS OF ENGINEERS ORGANIZATIONAL STRUCTURE

The FY 1991 Energy and Water Development Appropriations Act directed the submission of a conceptual study on the Corps organizational structure. Events of the past year emphasize not only the foresight of the initiative for the conceptual study, but also the need for organizational change.

As you know, the Corps developed a reorganization proposal for inclusion in the Department of Defense's (DOD's) Base Closure and Realignment (BRAC) submission. While supporting the need for Corps reorganization, the DOD felt that the dual missions of the Corps—civil and military—and the differing Committee jurisdictions over the Corps—Public Works and Armed Services—argued in favor of separate legislation with respect to the Corps.

The Secretary of Defense, the Honorable Richard Cheney, in his press conference of April 12, 1991, said separate, freestanding legislative recommendations would be sent to Congress for the Corps. The DOD is presently reviewing possible options for accomplishing the reorganization.

Mr. Chairman, this concludes my statement.

TABLE A
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS – CIVIL WORKS
FISCAL YEAR 1992 BUDGETED PROGRAM
(Dollars in Thousands)

	FEDERAL FUNDS				NON-FEDERAL FUNDS a/			
	TRUST FUNDS			TOTAL BUDGET REQUEST	RIVER & HARBOR CONTRIBUTED FUNDS			PROGRAM FUNDING
SOURCE OF FUNDS	INLAND WATERWAYS	HARBOR MAINTENANCE	GENERAL FUNDS		REQUIRED	ANCILLARY	TOTAL b/	
1. APPROPRIATION TITLE								
GENERAL INVESTIGATIONS	–	–	160,342	160,342	24,000	2,600	26,600	186,942
CONSTRUCTION, GENERAL	137,410	–	1,084,947	1,222,357 b/	154,860	30,300	185,160	1,407,517
OPERATION AND MAINTENANCE, GENERAL	–	498,600 c/	1,016,335 d/	1,514,935 b/	980	3,600	4,580	1,519,515
REGULATORY PROGRAM	–	–	86,000	86,000	0	–	0	86,000
F.C., MISSISSIPPI RIVER & TRIB'S	–	–	346,550	346,550 b/	4,900	500	5,400	351,950
GENERAL EXPENSES	–	–	150,000	150,000	0	–	0	150,000
FLOOD CONTROL & COASTAL EMERGENCIES	–	–	15,000	15,000			0	15,000
REVOLVING FUND	–	–	0	0	0	–	0	0
PERMANENT APPROPRIATIONS	–	–	13,000	13,000	0	–	0	13,000
TOTAL	137,410	498,600	2,872,174	3,508,184	184,740	37,000	221,740	3,729,924
2. COASTAL WETLANDS RESTORATION TRUST				34,012 e/	7,100		7,100	41,112
3. TOTAL FUNDING – CW PROGRAM				3,542,196	191,840	37,000	228,840	3,771,036

a/ Cash contributions required by law for programmed work and work to be done on a reimbursable basis

b/ Reflects expected savings of $45 million associated with the Government–wide administrative reforms under, and proposed legislative changes to, the Davis–Bacon Act. Expected savings: CG @ $17.92; O/M @ $19.27; MR&T @ $4.45 and R&H Contributions @ $3.26 million.

c/ Reflects receipts which would result from enacted raise in ad valorem fee to 0.125 percent of cargo value

d/ Includes $15.0 million to be derived from the Special Recreation Use Fees receipts

e/ Allocated share of appropriation from the Sport Fish Restoration Account (Small Engine Fuel receipts) for long–term conservation, protection and restoration of coastal wetlands in the state of Louisiana

TABLE B
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS – CIVIL WORKS
ENVIRONMENTAL RESTORATION AND INFRASTRUCTURE IMPROVEMENT HIGHLIGHTS
FISCAL YEAR 1992

	Total Federal Cost	FY 1992 Continuing	FY 1992 New Initiative
ENVIRONMENTAL RESTORATION:			
GENERAL INVESTIGATIONS			
New Reconnaissance Studies	6,855,000		1,902,000
Economics of Global Climate Change Study	1,000,000		400,000
CONSTRUCTION, GENERAL			
Columbia River Juvenile Fish Mitigation, WA, OR and ID	250,000,000	31,700,000	
Project Modifications for Improvement of the Environment (Section 1135)	N/A	7,500,000	
Tennessee–Tombigbee Waterway Wildlife Mitigation, AL and MS	71,000,000	10,000,000	
Yolo Basin Wetlands, Sacramento River, CA	4,500,000	1,600,000	
Lower Snake River Fish & Wildlife Compensation, WA, OR & ID	218,000,000	13,100,000	
OPERATION AND MAINTENANCE, GENERAL			
Coastal America Partnership	14,000,000		7,000,000
Wetlands Research Program	22,000,000	11,000,000	
Wetlands Action Plan and Demonstration Program	1,000,000		1,000,000
FLOOD CONTROL, MISSISSIPPI RIVER AND TRIBUTARIES			
Davis Pond Freshwater Diversion Structure–MS River Delta Region, LA & MS (Constr)	33,000,000	3,850,000	
Mississippi & Louisiana Estuarine Area, MS and LA	53,000,000	3,100,000	
Yazoo Basin Backwater Fish & Wildlife Mitigation, MS (Constr)	6,900,000	500,000	
Yazoo Basin, MS – Reformulation Study	15,000,000	3,200,000	
TOTAL – ENVIRONMENTAL RESTORATION INITIATIVES	$ 696,255,000	$ 85,550,000	$ 10,302,000
INFRASTRUCTURE IMPROVEMENT:			
GENERAL INVESTIGATIONS			
Development of a Federal Infrastructure Strategy	4,350,000	2,500,000	
Magnetic Levitation Transportation Pilot Program	131,500,000	8,000,000	
Construction Productivity Advancement Research	28,500,000	4,500,000	
Environmental Service Privatization – Special Study	5,500,000		1,000,000
CONSTRUCTION, GENERAL			
Project New Starts	1,111,963,000 (1)		18,065,000
Major Rehabilitation New Starts	101,856,000 (1)		36,329,000
OPERATION AND MAINTENANCE, GENERAL			
Repair Evaluation Maintenance and Rehabilitation Research (REMR II)	35,000,000	6,000,000	
TOTAL – INFRASTRUCTURE IMPROVEMENT HIGHLIGHTS	$ 1,418,669,000	$ 21,000,000	$ 55,394,000
TOTAL – FISCAL YEAR 1992 HIGHLIGHTS	$ 2,114,924,000	$ 106,550,000	$ 65,696,000

(1) Includes Inland Waterways Trust Funds

TABLE C
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS – CIVIL WORKS
FISCAL YEAR 1992 CIVIL WORKS PROGRAM

NEW CONSTRUCTION WORK – CONSTRUCTION, GENERAL ACCOUNT

(Dollars in Thousands)

PROJECT NAME	STATE	FY 1992 BUDGET REQUEST	TOTAL FIRST COST	FINANCING	
				FEDERAL	NON–FEDERAL
1. PROJECT CONSTRUCTION					
BAYOU LA BATRE	AL	500	18,700	5,148	13,552
HOMER SPIT STORM DAMAGE REDUCTION	AK	3,295	5,300	3,445	1,855
ALENAIO STREAM	HI	1,870	12,060	7,730	4,330
OLMSTED LOCKS AND DAM	IL & KY	11,400	1,070,000	1,070,000	* *
BRAZOS ISLAND HARBOR	TX	1,000	34,413	19,050	15,363
SUBTOTAL FOR 5 PROJECTS		18,065	1,140,473	1,105,373	35,100
2. MAJOR REHABILITATION					
* ILLINOIS WATERWAY, 4 LOCKS	IL	8,200	12,200	12,200	* *
* MISSISSIPPI RIVER, DAMS 11–18, 21 & 22	IL, IA, & MO	4,510	24,000	24,000	* *
* MISSISSIPPI RIVER, LOCK & DAM 13	IL & IA	2,100	13,000	13,000	* *
* MISSISSIPPI RIVER, LOCK & DAM 15	IL & IA	4,600	17,040	17,040	* *
* MISSISSIPPI RIVER, LOCKS & DAMS 2–10	MN, WI, & IA	8,220	17,489	17,489	* *
* BONNEVILLE POWERHOUSE	OR & WA	8,699	18,127	18,127	0
SUBTOTAL FOR 6 PROJECTS		36,329	101,856	101,856	0
TOTAL FOR 11 PROJECTS		54,394	1,242,329	1,207,229	35,100
AS A PERCENT OF TOTAL FIRST COST			100.00%	97.17%	2.83%

* Funding for such work was previously included in Operations and Maintenance, General Account.

** Part of the Inland Waterway System. One–half of the project cost will be paid from the Inland Waterways Trust Fund

STATEMENT OF NEW ENVIRONMENTAL APPROACHES

THE PRESIDENT'S ENVIRONMENTAL GOAL

Maintaining and restoring the health of the environment is an important goal of the President. Investments to achieve this goal are responsible investments—if they are made with due care, thought, and foresight. New approaches in the regulatory program, in new project construction, in operation and maintenance, and in support of other agencies are being adopted by the Army Corps of Engineers to align the Civil Works program with the President's goal.

Creative use of the extensive, existing expertise and authorities of the Corps of Engineers in support of the President's goal is emphasized. New authorities will be sought only when necessary for the Corps to carry out its existing water resources development and management missions in a way that allows for full consideration of restoration of environmental values.

IMPLEMENTATION OF THE PRESIDENT'S GOAL

Civil Works funds are to be used for justified (based on consideration of both monetary and non-monetary effects), cost shared proposals which restore to historic levels environmental values in situations where (1) a Civil Works project has contributed to their degradation, or (2) where the restoration can be most cost effectively accomplished through modification of an existing Civil Works project. This commitment to restoration, which is made in light of Civil Works missions and capabilities, current obligations, and budgetary constraints, does not extend to improvements in environmental values beyond historic levels. The new approaches which have been adopted, together with examples, follow:

Fully employ existing authorities in planning and executing the Civil Works mission. Examples include:

—Implementation of new budget guidance giving fish and wildlife restoration the status of a priority project output.

—Fostering a consensus on a strategy to restore fish runs in the Columbia River basin without seeking new authority.

—Implementation of the regulatory program to support the President's environmental goal in a manner consistent with existing policy, and being prepared to modify the program to accommodate new policy guidance concerning "no net loss of wetlands."

Operate and maintain project facilities and related lands at existing Civil Works projects to contribute to restoration of fish and wildlife resources while maintaining authorized levels of project purposes. Examples include:

—Outgranting land and waters to States and others for fish and wildlife management.

—Management of vegetation on project lands to restore habitat.

—Modification of water levels and releases to improve fisheries and wetland areas.

—Innovative beneficial uses for dredged material and continuing research on the use of such material for wetlands restoration and creation.

Give full consideration in planning of new projects to restoration of environmental values and to mitigation of unavoidable adverse environmental effects to the extent justified. Examples include:

—Renewed emphasis on nonstructural approaches to resolving water resource problems.

—According budget priority to otherwise meritorious projects which have avoided adverse environmental effects or have fully mitigated adverse effects.

Coordinate and cooperate with other agencies in the execution of the regulatory program authorized under the Clean Water Act. An example is:

—Evaluation of Joint Federal Wetlands delineation Manual to ensure its proper implementation.

Coordinate and cooperate with other agencies where joint program planning and budgeting will result in the most effective attainment of environmental restoration goals. An example is:

—Modification of the Central and Southern Florida Flood Control project in order to facilitate expansion of the Everglades National Park and restoration of the Everglades Ecosystem.

Increase contribution of the engineering and project management expertise of the Corps of Engineers to reimbursable work conducted under the authority of another agency. Examples include:

—Potential assistance to Eastern Europe through the Environmental Protection Agency on rehabilitation of wastewater treatment systems.

—Superfund assistance to the Environmental Protection Agency in design and construction management and in oversight of construction by non-Federal responsible parties.

—Employ expertise of the Corps of Engineers to contribute to improved management of environmental programs at military bases funded by military appropriations.

—Assist commanders of military installations in privatization of solid waste management and water supply and wastewater treatment facilities.

SUMMARY STATEMENT OF LT. GEN. HENRY J. HATCH

Senator JOHNSTON. Thank you very much, Dr. Dickey.

General Hatch?

General HATCH. Mr. Chairman and members of the subcommittee, I am again honored to be testifying before you with Dr. Dickey on the President's fiscal year 1992 budget for the Corps of Engineers' civil works program. Thanks to you, the civil works program remains strong and responsive. I look forward to your continued support for this very important program so beneficial to our Nation.

My complete statement, which is submitted for the record, covers four topics: the fiscal year 1991 program, the fiscal year 1992 President's budget, reorganization, and the Corps' activities in support of Operations Desert Shield and Desert Storm and postwar recovery. I will summarize the first three of these fairly briefly, since they have already been discussed by Dr. Dickey, and focus a little bit on Operations Desert Shield/Desert Storm and our postwar recovery effort to give you a better sense of the extent of our operations beyond the civil arena, but, I would add parenthetically, using experience gained in our civil program in service to the Nation.

FISCAL YEAR 1992 PRESIDENT'S BUDGET

First, a word about the President's budget. The program total of $3.77 billion includes $3.7 billion for ongoing and $70 million for new start work. While the recommended appropriation is up nearly 6 percent from fiscal year 1991, as mentioned by Dr. Dickey, anticipated funding from contributions and user fee receipts of $914 million is up more than 14.4 percent over last year.

The budget provides for rebalancing the program within discretionary domestic spending caps, providing sufficient funding for reconnaissance and follow-on engineering and design studies to ensure steady and adequate investment in construction of water resources management facilities over the next 10 years. It provides funding for necessary maintenance under the Operations and Maintenance, General Program, and increased funding to improve responsiveness and effectiveness of the Regulatory Program. It furthers the President's goal of preserving America's heritage and protecting the environment in a growing economy and the Army's environmental focus by providing $262 million for environmental activities. And finally, it emphasizes infrastructure improvement, providing over $54 million for new construction projects, including five for new facilities and six for major rehabilitation of existing ones.

REORGANIZATION OF CORPS OF ENGINEERS

Now, to organization. We realize that Members of Congress are very sensitive to the subject of the Corps' closing and consolidating offices; however, as Dr. Dickey indicated, recent world events have demonstrated both the subcommittee's foresight in requiring a conceptual study and the need for organizational change. I am committed to reorganizing the Corps to provide a more suitable structure for effective, efficient service to the Nation and, to that end, will remain open-minded and innovative. At the same time, I will be careful to consider thoroughly, and to avoid or mitigate, any adverse impacts reorganization might have on members of the Corps family.

OPERATIONS DESERT SHIELD/STORM AND POSTWAR RECOVERY

Now, turning to Operations Desert Shield/Desert Storm and postwar recovery. Under our military program, we provided highest priority engineering and construction support for those operations. This included support in combat mobility, survivability, force sustainment, topographic engineering or mapping, real estate leasing, facility design, and contract administration.

The Department of Defense had already designated the Corps as its construction agent for United States operations support on the Saudi Arabian Peninsula. Our Middle East/Africa Projects Office in Winchester, VA, since reorganized into our Transatlantic Division, oversaw work done for U.S. forces under a host nation support agreement. Under this agreement, Saudi Arabia provided, free of charge to our country, food, water, life and operations support facilities, fuel, and transportation required by United States forces in defense of Saudi Arabia.

In addition, the Middle East/Africa Project Office administered a $100 million design/construction contract funded from the gulf peace fund for assistance in kind by the Japanese government to United States forces. Three other field operating agencies and three of our four laboratories provided extensive scientific, technical and operational assistance and training for U.S. forces, particularly our engineer topographic laboratory at Fort Belvoir. Once the war started, our role diminished to one of providing contract administration and technical assistance in support of work funded and contracted by other nations at their expense such as Germany, Japan, and Saudi Arabia.

Regarding postwar recovery, late last fall the Government of Kuwait asked the United States Government for support in emergency recovery and reconstruction of its country's civil infrastructure once the war was over. In response, the President directed the Departments of State and Defense to assume joint responsibility for assisting Kuwait and directed several other agencies, including the Corps, to participate. DOD tasked the Corps to assist in emergency restoration of facilities and systems of Kuwait's Ministries of Public Works, Electricity and Water, and National Guard.

On January 14, the Corps and the Government of Kuwait signed a foreign military sales agreement broadly outlining terms of Corps involvement and authorizing $46.3 million in work. On April 5, under the provisions of the U.S. Foreign Assistance Act, the United

States Government and the Government of Kuwait executed a letter of exchange authorizing an additional $54 million for the emergency recovery.

Under these instruments, we have been assisting in ways similar to those used in response to U.S. natural disasters, such as Hurricane Hugo or the Loma Prietta earthquake, with damage surveys, initial planning, and an emergency contracting for their recovery. We are maximizing participation of the private sector and opportunities for United States business in accomplishment of this work, all of which is being paid for by the Kuwaiti Government. Currently, our involvement is limited to a period of approximately 3 months following the end of the war.

Finally, the Secretary of Defense recently selected our Director of Civil Works, Maj. Gen. Pat Kelly, as his representative for reconstruction assistance in Kuwait. Needless to say, this was a source of great pride for him and for the Corps. His new duties, assumed on March 7, will include assisting the Secretary of the Army in planning and coordinating all DOD assistance in reconstruction to the Government of Kuwait.

CONCLUSION

In conclusion, under our civil program we are continuing to expand our effort initiated in fiscal year 1991 to serve the environment through protection, restoration and loss mitigation activities. And we are renewing emphasis on infrastructure maintenance, rehabilitation, expansion, and development. Under both our civil and military programs, we are committed to modernizing our organization to enhance our ability to deal with changing work and workload of current and future missions. Under our military program, we played a significant role in the support of Operations Desert Shield/Desert Storm, and now we are helping with recovery and reconstruction of Kuwait, having given over our own Director of Civil Works to that cause.

And, if I may, Senator, I would just like to mention a short people-related vignette to you. At the peak of Operation Desert Storm, we had about 100 civilian volunteers from all over the Corps assisting General Schwarzkopf in that operation. When the war started on January 16, we had about 300 specifically listed volunteers ready to replace or reinforce them—again, civilians from all over the Corps. On January 17, I thought it would be a good idea to check with those volunteers to see if they were still available now that the war had started and the SCUD missiles were beginning to come in. We were quite surprised and honored to see that our list of a little over 300 volunteers had grown within 2 weeks to 800.

All of our civilian volunteers, once the war began, were classified, as they normally would be, as noncombatants and, as such, were given an opportunity to be evacuated back to the United States. Not one of our volunteers over there elected to do so.

In summary, we are doing all that we can and can envision in both the civil and military arenas to be and become the best we can in service to our country. To these ends, we appreciate this committee's direction and support as we lead the Corps into the future.

Mr. Chairman, this completes my statement.

[The statement follows:]

STATEMENT OF LT. GEN. H.J. HATCH

Mr. Chairman and members of the subcommittee, I am honored to be testifying to you, along with the Acting Principal Deputy Assistant Secretary of the Army for Civil Works, Dr. G. Edward Dickey, on the President's FY 1992 (FY 1992) Budget for the Corps of Engineers' Civil Works Program.

Thanks to the President and Congress, the Civil Works Program remains strong and responsive. This program, so very beneficial to our Nation, merits your continued support.

My statement addresses these four topics: FY 1991 program; FY 1992 President's budget; reorganization, and Operation Desert Shield/Storm and Postwar Recovery.

FY 1991 PROGRAM—SUMMARY

FY 1991 appropriations provided new or greater-than-budgeted amounts totalling $294.5 million for 220 items of work. However, the appropriations total was slightly less than the President's Budget. The added work was financed largely with anticipated savings and slippage and unobligated balances carried in from FY 1990.

Added items include 42 construction projects under the Construction, General, (CG) and Flood Control, Mississippi River and Tributaries (MR&T) programs. These 42 projects include 25 new starts requiring Local Cooperation Agreements (LCAs) before construction can begin on them. We have been working diligently with local sponsors to obtain the LCAs.

Funding for the FY 1991 Program includes greater amounts from increased collections under provisions of the Water Resources Development Act of 1990 (WRDA 90), Sections 316 and 319. The first of these provides for a 1½-fold increase in payment, from "not more than 40" to "up to 100" percent, from the Harbor Maintenance Trust Fund for eligible costs for operation and maintenance assigned to commercial navigation. The second provides for establishment and collection of fees from states and other nonfederal public interests to defray half the cost of assistance provided under WRDA 74, Section 22, in development of state water plans. The fees will be phased in over the FY 1991–93 period, to recover 10, 30, and 50% of costs in the first and successive years of the period, respectively. Also, WRDA 90, Section 321, authorizes recovery of costs of floodplain management services provided to federal agencies and private persons, eliminating need to budget for such services, excepting those provided to states and other nonfederal public entities.

Revenue to be collected for the year, in the form of government receipts, is expected to increase by $17 million, owing to increased Regulatory Program permit fees designed to more fully defray administrative costs.

We have made significant progress in implementing the Corps' Project Management System, as measured in terms of improvement in accuracy of cost estimating and scheduling, and timely consummation of Local Cooperation Agreements (LCAs). Cost estimating has become more accurate because cost engineers are becoming more adept at using the sophisticated Microcomputer-aided Cost Estimating System (MCACES). Less than 30% of our construction projects have experienced noninflation cost growth, versus 50% the previous year. Still, I believe we can improve on this.

Scheduling, requiring better understanding of time required to accomplish various elements of work, is gradually becoming more realistic. Last year, Mr. Page testified that over half of our construction projects had experienced schedule slips; this year 38% have. I believe we can do better here, too.

And, finally, consummation of LCAs for funded new construction starts has proceeded nearly on schedule, with the signing of 40, or 87%, of those scheduled in FY 1990. This represents the largest number signed in any year since 1986, and brings to 144 the total number signed since then. Total federal and nonfederal cost of projects started under these LCAs is $5.7 billion. This, plus $1.4 billion for Inland Waterway System projects started since then, for which LCAs are not required, brings the total cost of our new start construction program, cost-shared under provisions of WRDA 86, to $7 billion.

EMERGENCY OPERATIONS

We are continuing to repair flood control and navigation facilities in parts of Texas, Oklahoma, Arkansas, and Louisiana damaged by near record flooding there early last summer. Approximately $40 million in supplemental Operations and Maintenance, General, funds were appropriated for this work. We are also repairing damaged nonfederal flood control facilities in Texas, under our emergency authority.

Late last year, we provided emergency assistance to the states of Oregon and Washington in fighting severe flooding caused by two tropical weather systems which drenched the Pacific Northwest with torrential rains in November, causing more than $100 million in damage. We estimate that flood storage in Corps reservoirs, including that provided by Howard Hanson and Mud Mountain dams, prevented $200 million in flood damage during these events. Currently, we are repairing flood control facilities damaged by the flooding.

Currently, we are supporting state and local efforts in Arkansas, Louisiana, and Mississippi, in response to recent record or near record flooding there. Our projects have functioned well, however, flood storage capacities have been exceeded and major flooding has occurred. We will continue to provide assistance, as needed.

Droughts in the 10-state Missouri River Basin and California are entering their fifth years. They have caused below normal inflows to the Corps' 6 mainstem Missouri River reservoirs (comprising the Corps' largest storage system in the country) and the Corps' 8 conservation reservoirs in the Central Valley, resulting in less water in storage, lower lake levels, and lower outflows.

The total shortfall of runoff at Sioux City, Iowa, for the four year period, 1987 through 1990, is 31.4 million acre-feet (maf)—an amount greater than the normal annual runoff of 25 maf. Under these circumstances, inflow has been insufficient to meet requirements for project purposes, and water has been drawn from the system's 39.3 maf conservation zone. The current Master Water Control Manual prescribes use of water in this zone consistent with need to conserve it, and provides for full use of such water during droughts as severe and extensive as in the 1930s. Thus, as the current drought has continued, rates of release for project purposes have been reduced. During the past four years, about 40% has been used to serve project purposes; the remaining 60%, or 23.5 maf, is available for use as the drought continues. Currently, pool levels of the upper three reservoirs of the system, Fort Peck, Garrison, and Oahe—the largest three, are 20 to 25 feet below normal—lowest at this time of year since the system first filled in 1967.

Although water content of snow in the mountains of the Fort Peck and Garrison watersheds increased to above normal during March and early April, because of abnormally low runoff in March, virtual absence of snow in the plains, and very dry soil, runoff for 1991 is forecast to be 19.0 maf—only 76% of normal.

The Corps' 8 Central Valley reservoirs provide conservation storage for municipal and industrial water supply and for agricultural crop irrigation. Before the March rains, the 8-reservoir system contained only 162,000 acre-feet (af) of water, about 11% of end-of February conservation zone capacity. By May, inflows had quadrupled system storage to 646,343 af, about 27% of the then conservation zone capacity. At Terminus Reservoir in the Tulare Lake basin runoff from the rains was sufficient to raise the pool (Lake Kaweah) into the flood control zone. At the request of the Kaweah-Delta Water District, the Corps modified its water control plan to promote replenishment of groundwater reserves through the district's water-spreading facilities.

Water content of snow in watersheds of four of these reservoirs, namely: Terminus, Success, Pine Flat, and Isabella, has risen from about 15% of the normal April 1 value in February to above 70%. Much of this water will run off during middle and late spring. Snowmelt runoff is forecast to be about 60% of the April-June average volume. Unless the water districts make unusual draws on water, we forecast that Terminus will fill to capacity and that the three others will fill to about 85% capacity. Unless additional rainfall occurs, which is highly unlikely, the other four reservoirs, namely: Black Butte, New Hogan, Buchanan, and Hidden, are not likely to rise substantially above current levels.

In early February, representatives of 7 federal agencies formed a federal task force to collaborate with the State of California in addressing drought issues. A principal objective of this task force is to establish and maintain close coordination and cooperation with all interests, to minimize regulatory and legal conflicts and maximize system efficiencies. I am supporting the Secretary in his role as a member of this group.

TABLE A
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS – CIVIL WORKS

PROGRAM SUMMARY, FISCAL YEARS 1990, 1991 AND 1992

(DOLLARS IN THOUSANDS)

SOURCE OF FUNDS	FY 1990 (Approp.) a/	FY 1991 (Approp.) b/	FY 1992 BUDGET REQUEST c/
GENERAL INVESTIGATIONS	129,251	146,433	160,342
CONSTRUCTION, GENERAL			
General Funds	959,729	1,026,073	1,084,947
Inland Waterways Trust Funds	124,082	116,998	137,410
SUBTOTAL	1,083,811	1,143,071	1,222,357
OPERATION AND MAINTENANCE, GENERAL			
General Funds	1,219,425 d/	945,157	1,001,335
Special Recreation Use Fees	19,720	20,000	15,000
Harbor Maintenance Trust Funds	159,074	485,494 e/	498,600
SUBTOTAL	1,398,219	1,450,651	1,514,935
REGULATORY PROGRAM	68,455	71,099	86,000
F.C., MISSISSIPPI RIVER & TRIB'S	330,296	344,602	346,550
GENERAL EXPENSES	141,997 d/	126,598 f/	150,000
F.C. & COASTAL EMERGENCIES	20,000 d/	20,000	15,000
REVOLVING FUND	9,860	0	0
PERMANENT APPROPRIATIONS	14,700	13,000	13,000
SUBTOTAL, APPROPRIATIONS	3,196,589	3,315,454	3,508,184
OTHER AVAILABLE FUNDS			
COASTAL WETLANDS RESTORATION TRUST	0	0	34,012
RIVERS AND HARBORS CONTRIBUTED FUNDS	135,819	176,000	228,840
TOTAL PROGRAM	3,332,408	3,491,454	3,771,036

a/ Reflects the sequester of 1.4 percent and the Dire Emergency Supplemental Appropriation Act, 1990.

b/ Reflects, to the nearest thousand dollars, the sequester of 0.0013 percent, amounting to $42,933, necessitated by enactment of the Dire Emergency Supplemental Appropriation Act, 1991.

c/ Reflects expected savings of $45 million associated with the Government–wide administrative reforms under, and proposed legislative changes to, the Davis–Bacon Act.
Expected savings: CG @ $17.96; O/M @ $19.26; MR&T @ $4.45 and R&H Contributions @ $3.26 million.

d/ Reflects Dire Emergency Supplemental: GE @ $15; O/M @ $40; & FC&CE @ $20 million.

e/ Reflects receipts resulting from enacted raise in ad valorem fee to 0.125 percent of cargo value.

f/ Actually $136.1 million, with $9.5 million reallocated from FY 1990 carryover of appropriation for fire damage.

TABLE B
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS – CIVIL WORKS

PROTECTION AND RESTORATION OF ENVIRONMENTAL RESOURCES

A DETAILED SUMMARY
FISCAL YEAR 1992

PROJECT NAME	APPROPRIATION ACCOUNT (DOLLARS)				
	GI	CG	O&M	M R & T	REGULATORY
PROTECTION AND RESTORATION					
Regulatory Program					
Implements the environmental provisions of Sect.404 of Clean Water Act, Section 10 of 1899 Rivers and Harbors Act, and Section 103 of Marine Protection, Research and Sanctuaries Act					
Total Regulatory Program Cost					86,000,000
Coastal America Partnership			7,000,000		
Project Modifications for Improvement of Environment Section 1135 WRDA '86		7,500,000			
Wells Harbor, ME; Wetlands restoration project	125,000				
Big Bend Dam – Lake Sharpe (Wildlife Restoration),SD	60,000				
Missouri River Levee System, Unit I–246,Cutoff Lake, (Fish & Wildlife Restoration)	270,000				
Oahe Dam–Lake Oahe (Wildlife Restoration), SD	140,000				
Arkansas R. Wetlands & Flood Control, AR	300,000				
Kaskaskia River Basin, IL	250,000				
East Fork Basin Study, MS	82,000				
Lehigh River Basin, PA	475,000				
Susquehanna R. Basin, Fish Restoration, PA	200,000				
Yolo Basin Wetlands; Sacramento River, CA; wetlands restoration project		1,600,000			
Upper Mississippi River System, Environmental Mgmt. Plan; IL, IA, MN, and MO		19,455,000			
Wetlands Research Program; investigate restoration & development, functions and values, assessments and trend techniques			11,000,000		
Mississippi and Louisiana Estuarine Areas, LA and MS; continues construction of Bonnet Carre diversion				3,100,000	

TABLE B (Cont'd)
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS – CIVIL WORKS
PROTECTION AND RESTORATION OF ENVIRONMENTAL RESOURCES
A DETAILED SUMMARY
FISCAL YEAR 1992

PROJECT NAME	APPROPRIATION ACCOUNT (DOLLARS) GI	CG	O&M	M R & T	REGULATORY
PROTECTION AND RESTORATION [Cont.]					
Mississippi River Delta Region, LA and MS; Davis Pond and Caernarvon freshwater diversions				4,200,000	
Ray Roberts Lake, TX; wetland construction		50,000			
Calleguas Creek, CA; Measures to protect wetlands and endangered species	220,000				
Lower Savannah River, GA; protection of wetlands	150,000				
Lower Las Vegas Wash Wetlands, NV	350,000				
Mermentau, Vermilian and Calcasieu Rivers; Grand and White Lakes Water Management Study, LA	427,000				
Red Lake–Clearwater Rivers, MN; Study of wetland restoration and creation; water quality; and fisheries	155,000				
St. Francis River Fish and Wildlife study, AR and MO; study of fish and wildlife enhancement				230,000	
James River, SD; study of environmental restoration	235,000				
Calcasieu River and Pass, LA; marsh creation with dredged material			3,665,000		
Jackson Hole Restoration, WY	212,000				
Cuivre River Area, MO	210,000				
Alexander & Pulaski Counties, IL	310,000				
Mississippi R., Between the Ohio and Missouri, IL			80,000		
Yazoo Basin, MS					
St. Francis R. Basin, Wappapello Lake				33,000	
Arkabutla, Enid, Grenda & Sardis Lakes				683,000	
Big Sunflower River				38,000	
Upper Yazoo Projects				3,235,000	
Total, Protection and Restoration					
By Account	4,171,000	28,805,000	21,745,000	11,519,000	86,000,000
Total	152,040,000				

TABLE B (Cont'd)
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS – CIVIL WORKS
PROTECTION AND RESTORATION OF ENVIRONMENTAL RESOURCES
A DETAILED SUMMARY
FISCAL YEAR 1992

	APPROPRIATION ACCOUNT (DOLLARS)				
PROJECT NAME	GI	CG	O&M	M R & T	REGULATORY
MITIGATION					
Columbia River Juvenile Fish Mitigation, WA, OR, & ID		31,700,000			
Tennessee–Tombigbee Waterway Wildlife Mitigation, AL and MS		10,000,000			
Atchafalaya Basin Floodway System, LA; land acquisition for fish and wildlife facilities				9,700,000	
Yazoo Basin, MS					
Yazoo Basin Reformulation Study (MR&T), MS				3,200,000	
Yazoo Backwater Fish & Wildlife Mitigation Lands, MS				500,000	
Cooper Lake and Channels, TX; continuation of habitat development for fish and wildlife		2,200,000			
Dry Creek (Warm Springs) Lake, CA, Fish Hatchery Expansion		2,060,000			
Red River Waterway, LA		2,005,000			
Gallipolis L & D, WV and OH, Fish & Wildlife Mitigation		530,000			
Lower Snake River Fish and Wildlife Compensation Plan, ID, OR, and WA		13,100,000			
Management of Natural Resources; ecological mgmt. of project lands and waters			33,367,000	635,000	
Santa Ana River Mainstem, Mitigation Plantings, CA		1,037,000			
Little Dell Lake, Fish and Wildlife Mitigation, UT		50,000			
Richard B. Russell Dam and Lake, Wildlife Mitigation, GA and SC	300,000				
Total, Mitigation					
By Account	300,000	62,682,000	33,367,000	14,035,000	0
Total	110,384,000				
Summary – Focus On the Environment					
By Account	4,471,000	91,287,000	55,112,000	25,554,000	86,000,000
Total	262,424,000				

FY 1992 PRESIDENT'S BUDGET—OVERVIEW

Table A shows programmed amounts totalling $3.77 billion. This includes $3.70 billion for ongoing and $0.07 billion for new start work. The recommended appropriation is $3.51 billion, up nearly 6% from FY 1991, while anticipated funding from contributions and user fee receipts is $914 million, up more than 14.4%.

The budget reflects projected savings of $45 million from reforms under and proposed changes in the Davis-Bacon Act, and new and significantly higher economic and pay assumptions than previously allowed. These assumptions have resulted in allowances to cover proposed federal pay raises, including SES (Senior Executive Service) increases, fully, instead of only partially, as before; allowances to cover newly authorized "geographic differential pay" of up to 8% for federal workers in New York City, Los Angeles, and San Francisco CSMSAs (Consolidated Standard Metropolitan Statistical Areas); and allowances to cover increases in agency contributions for employee programs.

The budget provides adequate funding, with a number of exceptions, for execution of the ongoing program. It provides $60.4 million for 29 new starts, including $2.9 million for 10 new reconnaissance studies for environmental restoration and infrastructure improvement; $3.1 million for 8 new PED (preconstruction engineering and design) studies following from feasibility studies that were not cost-shared; $54.4 million for new construction work including 5 project new starts and 6 major rehabilitation new starts; and $64.5 million for continuation of 72 FY 1991 Congressional adds.

The budget provides for rebalancing the program within discretionary domestic spending caps, providing funding levels for reconnaissance and follow-on PED studies to ensure steady and adequate investment in construction of water resource management facilities over the ensuing 10-year period. It provides funding for major rehabilitation work under the CC Program, as well as a responsible maintenance effort under the Operation and Maintenance, General, (O&M) Program. It also provides funding for ramping-up manpower of the Regulatory Program to improve responsiveness and effectiveness of the program.

ENVIRONMENTAL EMPHASIS

In furtherance of the President's goal of "preserving America's heritage and protecting the environment in a growing economy," and Army's new environmental approaches discussed in Dr. Dickey's complete statement, we are continuing and broadening our environmental effort, with a longer range view to developing environmentally sound projects to prevent further degradation of the Nation's precious natural resources. To this end, as shown in Table B, the budget provides $262 million for environmental protection, restoration, and loss mitigation activities, including $152 million for protection and restoration and $110 million for mitigation activities.

More than half of the $152 million for protection and restoration of wetlands—$86 million—is for the Regulatory Program, including an increment to provide for ramping up manpower to enable reducing permit application backlogs and decisionmaking delays, improving enforcement capability, and continuing training and technical support for wetlands protection. Budget amounts for other activities include: $19.5 million for habitat restoration and enhancement under the Upper Mississippi River System, Environmental Management Plan, IL, IA, MN, MO and WI, including $3.4 million for new work; $11 million for continuing research, started In FY 1991, to ascertain wetland characteristics and efficient techniques and procedures for determining wetland functions, values, and cumulative impacts of losses; delineating wetlands; minimizing adverse impacts on, restoring, and creating wetlands; and stewardship and management of wetlands; and $9.1 million, including $1.6 million for Yolo Basin Wetlands, Sacramento, CA, for work to modify existing projects to improve the environment (under WRDA 86, Section 1135, as amended by WRDA 90, Section 304).

The $110 million for loss mitigation includes $33.4 million for continued management of project lands and waters in the interest of improving ecology; $31.7 million for continued construction of fish bypass facilities under the Columbia River Juvenile Fish Mitigation, WA, OR, and ID project; $13.1 million for continued implementation of the Lower Snake River Fish and Wildlife Compensation Plan, ID, OR, and WA; and $10 million for continued land acquisition under the Tennessee-Tombigbee Waterway Mitigation, AL and MS, project.

In addition to the projects and programs highlighted in the President's Budget, which will receive special emphasis during our planning and implementation process, other mission-related work involves activities of an environmental nature. In

FY 1992 such activities will account for over $67 million in the Civil Works budget, as well as nearly $250 million from sources other than our own appropriations.

An example is the $34 million from the Coastal Wetlands Restoration Trust Fund. This trust fund, established for the Coastal Wetlands Restoration Program, will provide for development of a Wetland Action Plan and Demonstration Program by a multiagency group, namely, the Louisiana Coastal Wetlands Conservation and Restoration Task Force, chaired by the Secretary. The fund will receive collections of "small engine fuel tax," accruing to the Federal Highway Administration's Highway Trust Fund from December 1 1990 to October 1, 1995. These collections will be paid into the U. S. Fish and Wildlife Service's (USFWS's) Sport Fish Restoration Trust Fund and transferred to the Corps for use by the task force.

INFRASTRUCTURE EMPHASIS

The total federal and nonfederal capital investment for ongoing and new projects of the CG and MR&T programs, through FY 1992, is $19.9 billion. Add to this, estimated costs of projects expected to enter these programs from PED in the near future, and the total capital investment is $20.1 billion, including $18.0 billion through FY 1991, and $2.1 billion in FY 1992. This total reflects federal and nonfederal investment in project facilities, lands, easements, rights-of-way, relocations, and cash contributions, as applicable.

We are concerned about the Nation's water resources management and transportation infrastructure. Navigation facilities on the Illinois Waterway and Mississippi River, and a hydropower generation plant on the Columbia River, are in states of advanced deterioration and need to be rehabilitated.

Navigation facilities on the Ohio River need to be replaced to meet increased demand for passage of commercial vessels. And new facilities are needed In several places to meet public demand for additional flood control, commercial navigation, and storm damage reduction capability. In view of this, we are renewing emphasis on infrastructure improvement. To this end, the budget provides $54.4 million for new construction work, described under Overview, with a total capital investment of $1.24 billion. This includes federal investment of $1.2 billion, part of which is paid from the Inland Waterway Trust Fund to cover half the costs of work on locks and dams of the Inland Waterway System.

In recognition of the importance of caring for existing facilities, we are now budgeting for major rehabilitation projects under the CG account, rather than separately, under the O&M account, as before. As a result, these and traditional new construction start projects are now competing directly for resources. This has introduced appropriate discipline into the new start decisionmaking process. Based on this, $18 million is recommended for 5 new start construction projects for flood control, commercial navigation, and storm damage reduction, including $11.4 million for Olmsted Lock and Dam, IL. Also, $36.3 million is recommended for major rehabilitation of facilities of 6 projects, including $27.6 for 5 Inland Waterway projects in the interest of maintaining integrity of the national waterway transportation system, and $8.7 million for Bonneville Powerhouse, OR and WA, in the interest of preserving hydropower generation capability.

The budget provides $8 million for Corps research and development, in collaboration with the Department of Transportation (DOT), through the MAGLEV (Magnetic Levitation Transportation System) Program, on a state-of-the-art high-speed ground transportation system prototype, in the interest of supplementing the national transportation system infrastructure. It also provides $6 million for the REMR II (Repair, Evaluation, Maintenance and Rehabilitation, II) Program for, among other things, developing improved materials and methods for maintenance, repair, and major rehabilitation of locks and dams of the national waterway systems.

The budget also provides $4.5 million for the CPAR (Construction Productivity Advancement Research) Program to continue cost-shared research and development with the private and nonfederal public sectors in the interest of improving productivity and competitiveness of the Nation's construction industry and lowering construction costs for the federal government. Since its inception in 1989, the program has produced 29 projects for improved materials, design methods, construction methods, and environmental restoration. Costs of these projects total $20.9 million, with federal and nonfederal shares of $6.7 million and $14.2 million, respectively. We expect to complete 9 of these projects within 12 months, including one providing for robotically assisted masonry construction in the interest of higher quality masonry, and faster and safer work; and another providing for "bioremedial cleanup" of contaminating oil and fuel from soils and water, involving on-site addition of nutrients to stimulate indigenous microbes to consume the contaminating materials and, thus, eliminate them, precluding need for more disruptive and costly cleanup operations.

And, finally, the budget provides $2.5 million to continue development of a national action strategy for addressing America's infrastructure problems; and $1 million for a new study to explore ways and means to stimulate private sector participation to ensure timely and adequate operation, maintenance, rehabilitation, expansion, and development of the Nation's infrastructure. This second study will address the Corps' proposal for a multiagency—federal/nonfederal government/private sector interests—"Partners for Environmental Progress" (PEP) Program, for rebuilding and developing "environmental services facilities." These include water supply, wastewater treatment and solid waste disposal, and waste-to-energy conversion facilities.

The PEP Program has two objectives. One is to establish Corps/state/local government partnerships to conduct joint, cost-shared, market feasibility studies of opportunities for private sector investment in such environmental services facilities. The purpose of these studies would be to reduce risk to local communities needing such facilities and private sector investors who might provide them. The Corps would also provide reimbursable technical services, including planning, economic analysis, engineering, and financial analysis to state and local governments.

The second objective is to dovetail PEP with EPA's Public/Private Partnership (P3) Program, through participation in a nationwide outreach and demonstration program to increase awareness of potential benefit of public/private partnerships in providing for needs for environmental services and related infrastructure. We and EPA are making good headway in our cooperative efforts to accomplish this.

OTHER SIGNIFICANT PROGRAM DETAILS

The budget includes increased funding of $13.9 million for the General Expenses Program to cover, not only pay and contributions increases described above, but also, abnormally high increases in General Services Administration rent, and several extraordinary expenses. These extraordinary expenses include $2.4 million for direct funding of expenses of centralized activities currently "billed back" to field offices, in accordance with recommendations of the accounting firm of Grant Thornton, Inc. They also include $0.6 million for furniture replacement and $0.3 million for management studies of civil works program execution.

We propose, and will be submitting, 6 legislative initiatives for authority to implement certain aspects of our program. One, for the PEP Program, would authorize the Secretary, in cooperation with nonfederal interests, to undertake a cost-shared 4-year demonstration program to determine feasibility of private sector participation in development of the Nation's environmental services infrastructure. The second, for the MAGLEV Program, would authorize appropriations beyond FY 1991 for research and development of magnetic levitation technology. The third would authorize collection of certain recreation user fees by removing current restrictions on imposing them. The fourth would eliminate the requirement to provide one free campground wherever camping is permitted. The fifth, providing for "challenge cost sharing," would authorize increased participation by nonfederal interests in development of recreation opportunities at our reservoirs. And the sixth, regarding the Harbor Maintenance Trust Fund (HMTF), would authorize payment from the Fund for administrative costs of collecting port user fees.

A significant part of the Corps' FY 1992 program, which is not reflected in our budget, comprises reimbursable support for other federal agencies and governments through work involving use of established specialties in engineering and project management. Total reimbursement funding for such work is projected to exceed $400 million. (Most of this—about $250 million—is for "environmental support for others," mentioned under Environmental Emphasis.) The largest share—over $200 million—is expected from EPA for cleanup of wastes at numerous sites under its Superfund Program, and technical and contract performance assurance review for wastewater treatment facilities under its Construction Grants Program. The next largest share—over $60 million—is expected from the Department of Energy (DOE) for facilities engineering for 3 operating plants, namely: the Bannister Road Federal Complex, Kansas City, MO, and Rocky Flats, CO, and Savannah River, Aiken, SC, plants; and for cleanup of hazardous and toxic wastes at plants in Hanford, WA, and Amarillo, TX.

The civil program manpower allocation totals 27,800 full-time-equivalent manyears (FTEs), including 938 for reimbursable environmental restoration support for others. The total includes the second year installment of a 3-year ramp-up of 229 FTEs for the Regulatory Program, to handle increased permit and enforcement workload.

REORGANIZATION

On January 4, 1991, in response to Public Law 101–514, the Energy and Water Development Appropriations Act, 1991, we provided, to you and others with legislative jurisdiction over major civil and defense activities for the Department of the Army, copies of our "conceptual study" report on potential field organization structures for the Army Corps of Engineers.

I realize that Members of Congress are very sensitive to the subject of closing and consolidating offices, however, recent world events have borne out, not only the Subcommittee's foresight in requiring a conceptual study, but also, need for organizational change. The wholesale restructuring of the armed services, in response to these events, has precipitated changes in scope and distribution of our military construction workload expected to continue into the foreseeable future. And our civil works program, although presently stable, is beset with unbalanced distribution of workload and workers of the needed specialties and numbers to execute it. Clearly, our present structure,despite having served us so well since its initiation in the 1930s, may not be best for meeting future needs.

The study confirmed need to examine our organizational structure in light of the full range of our civil, military, and work for others missions. It led to identification of three factors driving our need to reorganize, specifically, need to reduce operating costs, increase flexibility to handle changing workload and engineering challenges, and foster competence in our workforce.

Consistent with Congressional intent, the report neither suggests nor recommends specific geographic changes to the existing organization; rather, It describes the following: alternative organizational structures for reducing program costs without adversely impacting quality of service; factors and criteria for use in shaping optimally efficient structures; existing constraints which would interfere with implementation of such structures; and considerations necessary in order that the Corps might best position itself to address future engineering and environmental challenges of the Nation. Our principal objective in reorganizing is to increase our ability to deal more effectively and efficiently with changing work and workload of current and evolving missions.

As explained in the report, our intention, then, was to pursue further studies and possible reorganization under procedures prescribed by the Defense Base Closure and Realignment Act of 1990 (BRAC), providing for realigning/closing military installations. However, on April 12, 1991, the Secretary of Defense, while supporting our need to reorganize, explained that, because of the separate committee jurisdictions over the Corps' dual civil and military missions, our reorganization should be pursued separately, under freestanding legislation, and not under the BRAC process.

I am committed to reorganizing the Corps to provide a more suitable structure for effective, efficient service to the Nation, and, to that end, intend to be open-minded, resourceful, and innovative. At the same time, I will be careful to consider thoroughly, and avoid to the fullest extent practicable, whatever adverse impacts reorganization might have on all members of the Corps family.

CORPS' ROLE IN OPERATION DESERT SHIELD/STORM

Under our military program, we provided highest priority engineering and construction support for Operation Desert Shield/Storm, including support in combat mobility and survivability, sustainment, and topographic engineering activities; and in design, contract administration, and real estate activities.

The Department of Defense (DOD) designated the Corps as its construction agent for operation activities on the Saudi Arabian peninsula. In turn, we designated our South Atlantic Division and its Middle East/Africa Projects Office (MEAPO) (since reorganized into our Transatlantic Division) as our executive agents for this mission. MEAPO, a "unit" of the U.S. Central Command (USCENTCOM), supported CENTCOM in identifying and prioritizing real estate and construction requirements for life (health, welfare, and safety) and operational support for all U.S. Forces in the war zone. Its talented collection of Army officers and civilian engineers, real estate specialists, contract administrators, and construction inspectors leased critical facilities, designed/awarded/administered minor construction contracts, and contracted for engineering services and supplies.

Six other field operating agencies and laboratories provided significant, timely support to U.S. Forces, particularly, the Engineer Topographic Laboratory (ETL) which provided extensive scientific and technical assistance and training for the Army and Marine Corps. Scientific assistance ranged from providing data on the war zone's natural environment—meteorology, climatology, topography, geology, and hydrology—to producing and distributing "country profiles" of Iraq, Jordan, and

Saudi Arabia, with data on transportation, communications, and power generation and distribution systems; construction resources; and considerations for military strategy. Technical assistance included work to convert the Defense Mapping Agency's (DNA's) map, chart, and geodesy data and 33 LANDSAT "scenes" for use in automated terrain analysis systems; and digitizing "data overlays" from DMA's terrain analysis databases for use in computer models to produce crucial "tactical decision aids". Training provided by ETL included teaching soldiers and marines how to use the Army's Digital Topographic Support System Prototype, featuring portable computers and terrain analysis software, to provide on-the-spot support for field commanders. It also included teaching use of Global Positioning System receivers for accurate control of survey operations in the war zone.

PERSIAN GULF OIL SPILL

As you know, on or about January 19, Iraqi invasion forces began releasing crude oil from Kuwaiti oil fields, and its own crude oil from 5 tankers in the port of Mina al Ahmadi, through a pipe system to Sea Island terminal and into the Persian Gulf. On January 26, U.S. warplanes bombed the pipe system's two control facilities, or "manifolds," to stanch the flow of oil; however, by then over 8 million barrels had been released into the Gulf, making this the largest oil spill ever, more than 30 times the 260 thousand barrels spilled by *Exxon Valdez* in Prince William Sound, Alaska. Needless to say, the result has been a colossal environmental and economic disaster, fouling coastal waters and the coast itself in southern Kuwait and Saudi Arabia over a distance of nearly 300 miles, to Abu Ali Island.

The oil has destroyed environmentally sensitive coastal wildlife habitats, killed countless birds and fish, disrupted local fishing commerce, and contaminated several small desalinization plants and industrial water intakes. Only through use of an elaborate system of booms and oil removal equipment has Saudi Arabia been able to protect and continue operation of its main desalinization plant at Jubail.

The Corps, in support of the U. S. National Response Team, established to deal with hazardous material spill emergencies, has been providing technical assistance to the Saudi Arabian government, through the U.S. Interagency Assistance Team, in dealing with consequences of the spill. During the first 30 days, we assisted, principally, in selection of sites for construction of jetties to trap and contain the slick. We also assisted in design of schemes for collection of oil and protection of water processing facilities.

Since water-borne oil threatens to contaminate and impair critically needed desalinization plants, Saudi Arabia's Meteorology and Environmental Protection Administration (MEPA) has been focusing on containing and removing floating and emulsified oil in the numerous bays along the coast. Bechtel SA (Saudi Arabia), Crowley Marine, and other contractors from several countries, under contract with MEPA, have removed 1.2 million barrels of this to date. Because of its lesser priority, cleanup of oil stranded onshore has been limited, however, assessment and selection of methods for removing this are underway.

Most of the original spill is either trapped or stranded onshore north of Abu Ali, however, oil is still entering the Gulf from numerous sources in Kuwait, including leaking facilities and land sources.

U.S. ASSISTANCE IN RECOVERY/RECONSTRUCTION OF KUWAIT

While in exile, the Government of Kuwait asked the U.S. Government for support in emergency recovery and reconstruction of its country's civil infrastructure once the war was over. In response, the President directed the departments of State and Defense to assume joint responsibility for assisting Kuwait, and directed several other agencies, including the Corps, to participate. DOD tasked the Corps to assist in emergency restoration of facilities and systems of Kuwait's ministries of Public Works, Electricity and Water, and National Guard.

On January 14, the Corps and Government of Kuwait signed a Foreign Military Sales agreement, approved by the departments of State and Defense, broadly outlining terms of Corps involvement, and authorizing $46.3 million in work. Then, on April 5, under provisions of the U.S. Foreign Assistance Act, Section 607(a), the U.S. Government and Government of Kuwait executed a Letter of Exchange authorizing an additional $53.7 million for the emergency recovery. Under these instruments, we have been assisting with damage surveys, initial planning, and contracting for goods and services ultimately needed for civil reconstruction. We are maximizing participation of the private sector and opportunities for U.S. businesses, including small and disadvantaged businesses, in accomplishment of this work. All expenses under these instruments, effective for a period of 90 days following hostilities, are being reimbursed by the Government of Kuwait. Our Transatlantic Division (formerly MEAPO) has the lead for this effort, under the direction of our headquarters Military Programs Directorate.

On March 7, Major General Patrick J. Kelly, former Director of Civil Works, assumed duties as the Secretary of Defense's Representative for Reconstruction Assistance in Kuwait. General Kelly's Immediate duties will be to assist the Secretary of the Army in planning and coordinating Department of Defense reconstruction assistance to the Government of Kuwait.

CONCLUSION

We continue to improve our business operations through improved project and program management. We are making steady progress in project management, as measured in terms of cost estimating, scheduling, and timely consummation of LCAs. We are also making progress in program management through program development for 10-year periods, this, so we can see the outyear implications of decisions leading to construction before they are finally made, and can budget sufficient resources for reconnaissance and follow-on PED studies to ensure steady and adequate investment in water resource management projects.

We are continuing and expanding effort, initiated in FY 1991, to serve the environment through protection, restoration, and loss mitigation activities. We have issued Army's new environmental approaches statement to all subordinate commands, explaining that environmental restoration is to have priority equal to that of our traditionally highest priority flood control and commercial navigation purposes. We are resolute in pursuit of the President's "preserving America's heritage and protecting the environment in a growing economy" goal,and our "environmentally sustainable development" goal.

Additionally, we are renewing emphasis on infrastructure maintenance, rehabilitation, expansion, and development, and are vigorously exploring innovative arrangements including "partnering," involving public/private sector collaboration in problem solving. Given the scope and gravity of the Nation's infrastructure problems, public sector resources are simply insufficient to solve them. Private sector participation is essential.

And, finally, we are studying ways and means for modernizing the Corps' organization, with a view to achieving an efficient, effective, flexible structure, fully and easily adaptable to the changing civil and environmental engineering challenges, workload, and circumstances expected into the foreseeable future. We are coordinating with all concerned, to the fullest extent practicable, in order that the best result possible might be achieved.

In summary, we are committed to providing unwavering leadership in finding better ways and means to serve our great Nation, and truly appreciate your support to this end.

REORGANIZATION OF CORPS OF ENGINEERS

Senator JOHNSTON. Thank you very much, General Hatch.

Gentlemen, let me throw these questions out to you. And, Dr. Dickey, you, General Hatch, or General Williams, whoever wishes may answer.

First of all, with respect to the Corps budget and reorganization of the Corps, we are well aware that we are being squeezed budgetarily, that there is not as much work for the Corps to do as we would like because we don't have the money. And, consequently, the organization of the Corps around the country really needs to be streamlined. How much could be saved by reorganization of the Corps?

General HATCH. Sir, we estimate, in our first look, that we could save more than $100 million a year in perpetuity.

Senator JOHNSTON. And how long would it take to make that reorganization?

General HATCH. We could do it easily within 3 years. The upfront investment could be paid back, based on the savings of over $100 million a year, in less than 3 years.

Senator JOHNSTON. I am inclined to think that if that's going to be done we are going to have to do it in some kind of closing commission process. I don't know that we need to be quite that elaborate for the Corps, but certainly I think it has got to be some overall plan which would be accepted or rejected in toto, because, otherwise, individuals would object to moving a particular district or divsion out of their States. They would have to fight with that. Whereas, if it is part of an overall plan, I think it might be accepted.

How overstaffed are you in some areas of the country?

General HATCH. Sir, that really varies district by district, because the workload continues to fluctuate. As we speak, we are executing reduction-in-force procedures in at least a half a dozen districts because, for the short term at least, they are overstaffed.

One of our problems with the rather extensive structure of 39 districts is that we don't have the flexibility to respond to short-term fluctuations in workload. So, in one district, we're hiring new people while, in another, we're actually reducing employment. Our basic notion is that with fewer, more robust districts, we would have greater flexibility without having to hire and fire people as the local workload shifts.

Senator JOHNSTON. We do not want to shut down a lot of districts just to be overly efficient, but when it gets downright wasteful I think we need to do that. We need to conserve those scarce resources.

RED RIVER WATERWAY, LOCKS AND DAMS 4 AND 5

Let me turn to Red River Waterway project. As you know, some years ago, we adopted a schedule that would bring navigation to Shreveport by the year 1994. Every year, the OMB has played a little game with us where they do not request funding required to keep the project on schedule and we put it back in, everybody sort of winks and says they understand we're going to do that. Well, we are going to do that again and I hope everyone understands that. This year again, however, OMB put in only $38 million for ongoing activities related to the Red River Waterway project.

Have you slowed down work on phase I because of that $38 million request, or can we still—if we get funding, proceed on the 1994 schedule?

Dr. DICKEY. That's right, sir; we have not altered the schedule.

Senator JOHNSTON. Now, locks and dams Nos. 4 and 5 have been put under contract, and phase I should be completed by this year; is that correct?

General WILLIAMS. September 1991, Senator.

Senator JOHNSTON. By September 1991. And when would you be ready to initiate lock construction, assuming we appropriate the Corps' full capability?

General WILLIAMS. If we continue with locks and dams Nos. 4 and 5, we would move from phase II, which is design, into construction and our first contract could be awarded in December 1991, sir.

Senator JOHNSTON. December 1991 for award of main lock construction.

General WILLIAMS. Yes, sir.

Senator JOHNSTON. That is being designed?

General WILLIAMS. It is in the process of being designed now.

Senator JOHNSTON. That has been in design now for how many years?

General WILLIAMS. I don't know the number of years, but several years, Senator.

Senator JOHNSTON. And that design is on schedule, as well, to accommodate the 1994 schedule?

General WILLIAMS. That is correct, sir.

Senator JOHNSTON. So 1994 is still a valid date, calendar 1994, assuming weather and all of those things cooperate.

General WILLIAMS. That's correct, Mr. Chairman.

Senator JOHNSTON. And the Corps capability, I think, is $122 million, is still a valid figure?

General WILLIAMS. Yes, sir; that is correct.

Senator JOHNSTON. I would hope we can realize some savings because there are a lot of contractors that need work these days. So we will be talking to you about the amount of money you would need.

Can you tell me about the total annual benefits expected to result from the project that are attributable to the completion of navigation all the way to Shreveport?

Dr. DICKEY. I don't think we have that number with us, sir.

General WILLIAMS. We will provide that for you, sir.

Senator JOHNSTON. Well, I am advised by staff that, of the navigation benefit, 69 percent is dependent upon completion of the project all the way to Shreveport. So, we have to finish that last one-third of the work, basically, in order to get two-thirds of the benefits.

ADDITIONAL COMMITTEE QUESTIONS

I have several additional questions on Red River Waterway, which you may answer for the record.

[The following questions were not asked at the hearing, but were submitted to the Corps for response subsequent to the hearing:]

RED RIVER WATERWAY PROJECT

Senator JOHNSTON. Congress appropriated $92.6 million for the Red River Waterway project for fiscal year 1991 and provided specific bill language directing the Corps of Engineers to "continue the first phase construction of Locks and Dams 4 and 5 and continue at an accelerated rate the design of the second phase contracts for Locks and Dams 4 and 5 in order to initiate them in the second quarter of fiscal year 1992. * * *"

The budget request for fiscal year 1992 is only $38.3 million and if augmented with an additional $80-plus million, would have a significant impact on the completion schedule and costs for the project. The Corps has expressed a capability of $122 million for fiscal year 1992.

PROJECT COMPLETION SCHEDULE

How much is the completion schedule assumed by the appropriation for fiscal year 1991 impacted by the $38.3 million budget request for fiscal year 1992?

General WILLIAMS. The fiscal year 1992 budget request of $38.3 million would provide funding only for work in pools 1, 2, and 3. Because the Administration has identified economic and policy concerns associated with this project, no funding request was made for Pools 4 and 5 or for the continuation of Locks and Dams 4 and 5. Completion of Locks and Dams 4 and 5 and the associated pools is not programmed.

Senator JOHNSTON. What does the delay mean in term of increased costs for the project?

General WILLIAMS. The unscheduled costs for the remaining portions of Locks and Dams 4 and 5 and the associated pools amounts to about $439 Million. The budget does not assume any future funding of that remaining work. If the unprogrammed work were scheduled at some future date, the associated costs would be increased by the effects of inflation and possibly by deterioration of the Phase I construction sites. Also, shutdown costs would be incurred. For example, a 1-year funding hiatus would increase the cost by an estimated $10.4 Million.

Senator JOHNSTON. How much additional funding is needed to keep the project on schedule in fiscal year 1992? Provide a breakout of how the additional funds would be used.

General WILLIAMS. Additional funds of $83,709,000 would be required to keep the project on the schedule assumed by the fiscal year 1991 appropriations. A breakout of how these funds would be used follows:

Fiscal year 1992 additional capability

Item	*Amount*
Initiate Lock and Dam 4, phase II	$30,376,000
Initiate Lock and Dam 5, phase II	29,586,000
Initiate Cupples Capout	250,000
Initiate Sunny Point Dikes	956,000
Initiate Curtis Revetment	1,600,000
Initiate Eagle Bend Revetment	750,000
Initiate and Complete Carroll Capout	520,000
Continue McDade Revetment	2,019,000
Continue Moss Revetment	2,108,000
Continue Elm Grove Revetment	1,340,000
Continue Cecile Revetment	3,715,000
Miscellaneous Labor	370,000
Planning, Engineering, and Design	4,000,000
Construction Management	6,019,000
Initiate Mitigation Planning (Bayou Bodcau)	100,000
Total	83,709,000

Senator JOHNSTON. What would be the impact on construction if additional funding is not provided in fiscal year 1992?

General WILLIAMS. We would continue the work for which funding was provided in the fiscal year 1991 appropriations. Four bank stabilization contracts in Pool 5 could potentially have to be terminated, and additional costs of about $7 million associated with Locks and Dams 4 and 5 would be anticipated.

PROJECT BENEFITS

Senator JOHNSTON. What are the total annual benefits expected to result from the project and what portion to the total annual benefits are related to completion of the project to Shreveport?

General WILLIAMS. Total annual benefits are estimated at $107,226,000. About 70 percent of these benefits are associated with completion of the project to Shreveport.

DIRECTIONS CONTAINED IN THE FISCAL YEAR 1991 BILL

Senator JOHNSTON. Are you complying fully with the directions contained in the fiscal year 1991 Energy and Water Appropriations bill?

General WILLIAMS. We are complying fully. We are performing all of the work which was funded and directed in the fiscal year 1991 bill. All of the items contained in the fiscal year 1991 act either have been or will be accomplished by the end of fiscal year 1991, with the exception of the Fausse Capout in Pool 3. Award of the Fausse Capout contract will be delayed until March 1992 due to a delay in completing the base revetment.

STATUS OF WORK ON LOCKS AND DAMS 4 AND 5

Senator JOHNSTON. What is the status of construction of Locks and Dams 4 and 5?

General WILLIAMS. The Phase I contracts for Locks and Dams 4 and 5 were awarded in June and July 1990, respectively, and both are presently over 60 percent complete.

Senator JOHNSTON. Will Phase I construction be completed in fiscal year 1991 as previously planned?

General WILLIAMS. Yes, sir. The contracts should be completed in fiscal year 1991, assuming we have favorable weather conditions.

Senator JOHNSTON. What would be the impact on Locks and Dams 4 and 5 construction if additional funds are not provided in fiscal year 1992?

General WILLIAMS. All work on Locks and Dams 4 and 5 beyond the Phase I contracts would remain unprogrammed. Should construction then be resumed at some later time, additional costs would be incurred due to inflation and site deterioration.

WETLAND DEVELOPMENT AND ENHANCEMENT ACTIVITIES

Senator JOHNSTON. I have two questions with respect to wetlands. First of all, we have had some conversation here last year about a plan, sort of a reconnaissance survey on a plan to divert Mississippi River water in a massive way, really, to change the channel of the Mississippi River so as to dump that Mississippi River water in the gulf at a shallower depth, so that the literal east-west tides would take the silt on down to the Louisiana marsh. What is the status of that investigation, if "investigation" is the proper word?

General WILLIAMS. You are not referring to the fresh water diversion projects at Caernarvon and Davis Pond? You are talking about different studies.

Dr. DICKEY. I think you are talking about the sediment studies.

Senator JOHNSTON. Well, there is a school of thought that the only way to solve the real wetlands loss problem in Louisiana is, in effect, to cut the Mississippi River below New Orleans, to divert that flow out into shallow water; because right now, Southwest Pass, as you know, goes off the Continental Shelf within just a few miles. To divert that flow so that it will then come back with an east-west tidal effect, brush all the coast with silt and Mississippi River water would be a very expensive project. Last year I asked whether we needed specific language in the bill to require that, and I was advised—I forget who testified to that—that that was part of an ongoing investigation by the Corps.

Can you speak to that, General Williams?

General WILLIAMS. I don't know the detail. I am familiar with what you are referring to, Mr. Chairman. I don't know the details of the current status, but we will provide that for you.

Senator JOHNSTON. Would you do that? And if we need some more specific authority in the appropriation bills, let us know about that.

General WILLIAMS. Yes, Mr. Chairman.

Senator JOHNSTON. I hasten to say I am not necessarily advocating that because it has, in addition to what might be some wonderful effects, it might have other adverse effects. I would want to see what the pluses and minuses before advocating a position. But certainly, it is one of those things we ought to look into.

DIVERSION OF ATCHAFALAYA RIVER FOR BENEFIT OF WETLANDS IN TERREBONNE PARISH, LA

There is another plan to divert water, I believe it is from the Sabine down into—or maybe it was the Atchafalaya down into the Terrebonne Parish area. Do you have active investigations going on into the Terrebonne Parish area for diversion of fresh water from the Atchafalaya?

General WILLIAMS. We do have some studies, as I recall, on that one. But again, I don't have the data in front of me that gives the current status, so I will provide that for you.

Senator JOHNSTON. Would you supply that for the record?

[The information follows:]

DIVERSION OF FLOWS BELOW NEW ORLEANS

MISSISSIPPI RIVER

We conducted a reconnaissance study that addressed the feasibility of large scale diversions—on the order of 70 percent or more of the Mississippi River flow and sediments—to estuarine areas for the purpose of building wetlands. Our conclusions were that such diversions are engineeringly feasible but are not economically feasible or socially desirable. The Louisiana Department of Natural Resources concurred in our conclusion to terminate the studies during fiscal year 1990.

We considered several sites for large-scale diversions of the Mississippi River flow and sediment for the purpose of building wetland. The most cost-effective site was the east bank of the Mississippi River below New Orleans, near Bohemia, Louisiana. A large scale diversion at Bohemia would create an estimated 90,000 acres of wetland over a 50-year period. However, such a diversion would totally freshen Breton Sound Basin and drastically reduce commercially important fisheries such as shrimp, oyster, and menhaden. Commercial trapping in the area would be increased. The total cost of the plan would be about $102 million, and maintenance dredging of the Mississippi River would increase by about $11 million annually. The benefit cost ratio was estimated at 0.05 to 1.

ATCHAFALAYA RIVER

The Avoco Island Levee Extension (AILE) Study evaluates extending the existing Avoco Island levee 5.5 miles southward to reduce Atchafalaya River backwater flooding in areas east of the Atchafalaya Floodway.

Extending the Avoco levee would restrict freshwater flows into the Terrebonne Marsh. To mitigate this restriction, a freshwater diversion structure could be constructed in the existing Avoco Island levee about 2.5 miles south of Morgan City. The structure would consist of six 16-feet x 16-feet box culverts with sluice gates. Freshwater would be diverted from the Atchafalaya River and Bayou Shaffer through the structure into Avoco Lake and the Terrebonne Marsh. The structure would be sized to divert about 3,700 cubic feet per second.

The AILE levee extension would improve protection only from Atchafalaya River backwater. Flooding caused by headwater runoff from the Lake Verret basin and high stages in the Gulf of Mexico would continue. Because the area would continue to flood, recommendation of the AILE is not likely.

WETLAND DELINEATION ISSUE

Senator JOHNSTON. Now, with respect to section 404 regulatory program, the subcommittee had hearings earlier this year and Dr. Dickey was kind enough to testify. This is one of the most controversial and most difficult ongoing Federal-State relations problems at any time since I have been Senator. Simply put, these section 404 regulations take the tax base out of commerce, a huge amount of our otherwise usable land.

The feeling is, as Dr. Dickey knows having heard the testimony, that we don't just require 404 permits for marshes, bogs, and swamps, but we require them for pine savannahs, land that is as much as 12 feet above the flood lines, and property and subdivisions which have never been flooded and apparently have no danger of flooding simply because they have some hydric plant in the area—and the definition of hydric is disputed by many people. We always thought of pines as being the kind of trees that were in the highlands, and now we're told that they're hydric plants, which was a fantastic surprise to a lot of people.

The fact of the matter is that we really do need some help. The people in Louisiana are the last ones who want to lose our marshes, who want to lose the good effect that lands that drain into the marshes have because they are the breeding grounds of all our shrimp, fish, and oysters and all the rest. But to take this much property out of the tax base—they say in St. Tamany Parish there's not a parcel of land that you can build on now without a permit. And it is not sufficient to tell people to go get a permit because, to the average person who does not have a battery of lawyers and engineers at his beck and call, this is too big a thing to expect. He doesn't know how to do it, he doesn't have the money to do it, and he doesn't see why it's necessary to go get a wetlands permit for this piece of high ground which he owns.

So I mention this again, Dr. Dickey, as a matter of continuing concern. It continues to be debated. Every time I go home people say, "What are you doing? Why aren't you doing enough? Why aren't you keeping the Federal Government from being so unreasonable?" So let me ask you: Why does the Federal Government want to be so unreasonable?

Dr. DICKEY. Sir, I would hope that we don't wish to be unreasonable. Certainly, we are hard at work revising the manual, and let me just tell you the progress that has been made since I last testified before this committee.

STATUS OF REVISED DELINEATION MANUAL

At that time, indeed, the four agencies concerned—Army, EPA, Agriculture, and Fish and Wildlife Service—were hard at work. I am pleased to report to you, Mr. Chairman, that three of these agencies—Agriculture, EPA, and Army—have reached agreement on a revised manual and we are still working with the Fish and Wildlife Service.

But, the revised manual that we have developed, which I think you will find responsive to many of your concerns, is now at the Office of Management and Budget undergoing regulatory review before being published for public comment. Again, we are going to have the opportunity for public review.

As I said, the revised manual responds to many, many of the concerns that have been raised. And, certainly, the focus is on identifying those areas that are truly wetlands and ensuring that the standard of proof that must be met is considerably strengthened. So, we are hard at work. The agencies have worked very well together in developing that revised manual and we are certainly doing everything we can to get that published within the next month or so.

Senator JOHNSTON. Thank you very much, Dr. Dickey. You will recall that I had requested that we have you and representatives from EPA and Fish and Wildlife go to Louisiana with us. I hope we can set that up during the next recess, which is toward the end of this month.

Dr. DICKEY. I would be very happy to do that, sir.

MAJOR REHABILITATION OF INLAND WATERWAY PROJECTS

Senator JOHNSTON. Why does the Corps' proposed 1992 budget seek cost sharing from inland waterways trust fund for projects characterized as rehabilitation?

Dr. DICKEY. The 1986 authorization act provides that the trust fund may be used for new construction and for rehabilitation as provided for in appropriations acts. So, we have proposed funding one-half the cost of rehabilitation out of the trust fund, and we have proposed the necessary appropriation language that would allow us to use the trust fund. So, we are responding essentially to authority in the 1986 act to draw on the trust fund as provided for in appropriation acts.

Senator JOHNSTON. Is this a result of OMB's insistence on that procedure?

Dr. DICKEY. No; I would say this is a Department of the Army initiative. We believe very strongly that new capital investment should be cost shared, whether it be for rehabilitation—which, in many cases, is really a substitute for modernization or replacement, or new facilities. Olmstead Lock and Dam, which we are proposing as a new start this year, will replace locks and dam 52 and 53 on the Ohio. In other cases, it doesn't make sense to replace facilities but, rather, to rehabilitate them, however, with the same kind of capital investment. We believe that those kinds of investments should compete against one another and, indeed, should draw on the trust fund.

ADDITIONAL PREPARED QUESTIONS SUBMITTED FOR THE RECORD

Senator JOHNSTON. Thank you, Dr. Dickey. We will have further questions on this and other issues in writing for the record.

[The following questions were not asked at the hearing, but were submitted to the Corps for response subsequent to the hearing:]

MAJOR REHABILITATION—CATEGORIES

Senator JOHNSTON. Please explain in detail the categories of "rehabilitation"—modernization, reliability, and economies of scale—and explain how each differs from work which is in fact "maintenance."

Dr. DICKEY. The major rehabilitation program includes work that is non-recurring in nature and is intended to accomplish at least one of three objectives: (a) Modernization—improve operational and/or maintenance efficiency through modernization, (b) Reliability—fix engineering problems that adversely impact operations by causing unreliable performance, and (c) Scale Economies—reduce contracting or material costs significantly when similar work is scheduled simultaneously. Major rehabilitation is a capital expenditure intended to increase project benefits or to restore a project's ability to reliably provide authorized outputs. In contrast, maintenance expenditures are intended to prevent or slow down the rate of project deterioration and thereby eliminate or defer the need for major rehabilitation as a capital expenditure.

Senator JOHNSTON. The Inland Waterways Users Board was established by Congress in Section 302 of Public Law 99–662 "to develop and make recommendations to the Secretary regarding construction and rehabilitation priorities and spending levels on the commercial navigational features of the inland waterways and inland harbors of the United States for the following fiscal years. . ." It is my understanding that the Corps and Users Board have in place a formal communications network. Did the Corps consult with or advise the Users Board of the new "rehabilitation" policy in advance of the fiscal year 1992 budget submission? What is the Board's position on this policy?

Dr. DICKEY. On the day the President's fiscal year 1992 Budget was sent to Congress, February 4, 1991, I sent a letter to members of the Inland Waterways Users

Board informing them that funding for major rehabilitation projects was included in the Budget and that such work would be moved from Operation and Maintenance, General, to Construction, General. The letter also informed the Board that funding for inland waterway major rehabilitation projects would be financed on a 50/50 basis with one-half of the cost to be financed from the General fund of the Treasury and one-half of the cost to be financed from the Inland Waterways Trust Fund. On February 8, 1991, Mr. Charles T. Jones, Chairman of the Board, responded to my letter. He expressed the Board's belief that major rehabilitation of existing projects is an important and valuable adjunct to the ongoing program of lock and dam replacement but that the definition of major rehabilitation and policy developed by the Board and the Corps in 1988 should govern rather than the definitions which form the basis for the president's Budget proposals.

For the information of the Subcommittee, I will provide a copy of the exchange of correspondence for the record.

[The correspondence follows:]

LETTER FROM CHARLES T. JONES, CHAIRMAN, INLAND WATERWAYS USERS BOARD

February 8, 1991

Dr. G. Edward Dickey
Acting Assistant Secretary
of the Army (Civil Works)
Department of the Army
Washington, D. C. 20310-0103

Dear Dr. Dickey:

I am writing on behalf of the Inland Waterways Users Board in response to your letter of February 4, 1991, which informed Board members of the Administration's proposed budget submittal for navigation projects. While the Board was pleased to see strong budgetary support for authorized construction projects, it was dismayed and perplexed at the manner in which rehabilitation projects were included in the Construction, General program.

The Board has long held the belief that major rehabilitation of existing projects is an important and valuable adjunct to the ongoing program of lock and dam replacements. It recognizes that wise use of rehabilitation money can stretch Inland Waterway Trust Fund dollars to allow for the most efficient and effective use of those funds. Toward that end, the Board, in conjunction with the Corps, established a sound, rational, and workable definition of rehabilitation at a Users Board meeting in October, 1988. Under this definition, rehabilitation which is eligible for Trust Fund cost sharing encompasses projects which equal at least 20 percent of the cost of replacing the project to be rehabilitated so long as rehabilitation would not increase project capacity. For almost 2½ years the Corps has used this definition in managing its programs and to now change this policy without prior, adequate explanation or rationale is extremely troublesome to the Board. We understand that a new definition of rehabilitation is being discussed within the Administration.

While we believe the definition and policy developed by the Board and Corps in 1988 should continue to be the stated policy, we believe that the Board and other industry groups should be a part of any attempt to redefine rehabilitation for purposes of cost sharing. Congress and the Board will be extremely wary of any definition which includes normal operational and routine maintenance within the penumbra of rehabilitation.

The clear intent of the linkage of the word "rehabilitation" with "construction" in Section 1405 of the Water Resource Development Act of 1986 was to recognize that certain rehabilitation projects are of such a scope and nature as to be considered similar to traditional construction projects. We believe any definition which ignores this approach would do violence to Congressional intent. Furthermore, the Board is concerned that the well-thought out construction program that has been developed to date could be seriously delayed and disrupted if money needed for new construction and "major" rehabilitation were diverted to projects which in the past have been handled under the operation and maintenance program.

Because we believe that the definition used by the Corps in formulating the 1992 Budget is inappropriate, we will oppose at this time that portion of the Corps' 1992 Budget which includes cost sharing for rehabilitation projects.

It is our hope that this issue can be resolved in a manner which is fiscally responsible yet recognizes the legitimate need to ensure the integrity of the Trust Fund for its intended purposes.

Very truly yours,

Charles T. Jones
Chairman

CTJ:kws

cc: Gen. Patrick Kelly

LETTER FROM G. EDWARD DICKEY

04 FEB 1991

Mr. Charles T. Jones
President
Amherst Industries, Inc.
#2 Port Amherst Drive
Charleston, West Virginia 25306

Dear Mr. Jones:

The President's Fiscal Year 1992 Budget was released today and contains provisions which affect the Inland Waterways Trust Fund. We are encouraged that it shows strong Administration support for navigation projects.

For various reasons, concern over the Nation's infrastructure is widespread and growing. These include advanced deterioration of facilities, the need to modify other facilities and requirements for new facilities to expand existing systems or develop entirely new systems. In view of this, we are renewing emphasis on infrastructure improvement in the Fiscal Year 1992 Civil Works budget.

In recognition of the importance of caring for the vast inventory of existing facilities, we are budgeting in Fiscal Year 1992 for major rehabilitation projects under the Construction, General account, rather than Operation and Maintenance, General, as before. As a result, these projects will be able to compete with traditional new work construction on an equal basis for limited resources. This process has enhanced new start decision making. Based on this, $18 million is included for five new start construction projects, including $11 million for Olmsted Lock and Dam, Illinois. Also, $36 million is included for five inland waterway projects in the interest of maintaining the integrity of the national waterway transportation system.

Funding for the inland waterway major rehabilitation projects will be financed on a 50/50 basis with one-half of the cost to be financed from the General fund of the Treasury and one-half of the cost to be financed from the Inland Waterways Trust Fund. In accord with Section 1405 of the Water Resources Development Act of 1986, the President's budget requests the necessary appropriations language. An excerpt from the budget, showing this language, is enclosed. Also enclosed is a summary of the budget request for all projects funded from the Inland Waterways Trust Fund.

We look forward to working with the Board on these and other matters of mutual concern and intend to include major rehabilitation in the agenda of the forthcoming Board meeting in Galveston.

Sincerely,

G. Edward Dickey
Acting Assistant Secretary of the Army
(Civil Works)

MAJOR REHABILITATION—PROJECT LISTING

Senator JOHNSTON. Please provide the Subcommittee with a detailed list of "rehabilitation" projects included in the fiscal year 1992 budget and similar projects which are candidates for this category in subsequent years; please break out each by cost and description of the scope of work involved.

Dr. DICKEY. The attached list of projects are in the fiscal year 1992 budget for the Major Rehabilitation program. Future candidates will be evaluated based on specific reconnaissance studies for each subsequent year consistent with the definition and criteria developed for major rehabilitation.

MAJOR REHABILITATION PROGRAM—CURRENT PROJECT LISTING

[In thousands of dollars]

Project	Total cost	Fiscal year 1992 budget request
Illinois Waterway, 4 Locks, IL	12,200	8,200
Mississippi R., Locks and Dams 2–10	17,489	8,220
Mississippi R., Dams 11–18, 21, and 22	24,000	4,510
Mississippi R., Lock and Dam 15	17,040	4,600
Mississippi R., Locks and Dam 13	13,000	2,100
Bonneville Powerhouse, Oregon and Washington	18,127	8,699
Total	101,856	36,329

SCOPE OF WORK

Illinois Waterway, 4 locks, IL.— Replace lower miter gates and modify sills at Brandon Road, Dresden Island, and Marseilles Locks and resurface lock walls at Lockport Lock.

Mississippi River, Locks and Dams 2–10, MN, WI and IA.— Replace electrical system, miter gate machinery, and tainter valve machinery; and repair lock walls, dam piers, and earth embankments.

Mississippi River, Dams 11–18, 21 and 22. IL, IA and MO.—Replace the lower one-third of roller gate chains with stainless steel chains and replace tainter gate chains with log chains and pocket wheels.

Mississippi River, Lock and Dam 15, IL and IA.—Replace electrical system, miter gate machinery, and tainter valve machinery; resurface lock walls and dam piers; and repair and paint roller gates, service bridge, and emergency bulkheads.

Mississippi River, Locks and Dam 13, IL and IA.—Replace electrical system, miter gate machinery, and tainter valve machinery; resurface lock walls and dam piers; place scour protection upstream and downstream of tainter and roller gates; and repair and paint roller and tainter gates, service bridge, and emergency bulkheads.

Bonneville Powerhouse, OR and WA.—Replace transformers and appurtenant equipment (bushings, governors, and exciters) for 10 generating units.

MAJOR REHABILITATION—DEFINITION

Senator JOHNSTON. We would like your advice on the best way to define "rehabilitation" for these purposes. Do you feel Congress needs to become involved in fashioning a decision? Or, would the first attempt be better undertaken by the Corps, OMB, with industry leaders participating?

Dr. DICKEY. It is our intention, Mr. Chairman, to continue to work with OMB and the industry to refine the definitions of major rehabilitation and maintenance. In terms of the participation of Congress, we welcome your review of our proposals as they are being developed and submitted as parts of the budget process.

PROGRAMS, PROJECTS, INITIATIVES REQUESTED IN FISCAL YEAR 1992 BUDGET AND NOT REQUESTED IN FISCAL YEAR 1991 BUDGET

Senator JOHNSTON. How many programs, projects, or initiatives are being requested in the 1992 budget for which no funding was requested in 1991? Provide a list of those activities showing the amount requested in 1992 along with the total Federal and non-Federal costs.

General HATCH. Funds for five programs, 189 studies and projects, and four special initiatives are being requested in the fiscal year 1992 budget for which no funding was requested in the fiscal year 1991 budget. Many of these activities are included in the fiscal year 1992 budget request as the result of fiscal year 1991 congressional action. Funding for 33 of the 189 studies and projects had been requested in fiscal year 1991 under different work stage, and hence, different appropriation accounts other than are being requested in fiscal year 1992. A list of these activities follow:

CORPS OF ENGINEERS - CIVIL WORKS
PROJECTS REQUESTED IN FY 1992 BUDGET NOT REQUESTED IN FY 1991 BUDGET
(DOLLARS IN THOUSANDS)

FY 1992 NEW START	TITLE	FY 92 BUDGET AMOUNT	TOTAL FEDERAL COST	TOTAL NON-FED COST
	FC, MR&T			
	SURVEY FEATURES			
	ALEXANDRIA, LA	233	1,465	945
	MISSISSIPPI DELTA, MS	300	3,000	0
	SURVEY (2 ADDS)	533	4,465	945
	CONSTRUCTION FEATURES			
	WEST MEMPHIS & VICINITY, AR	4,800	11,000	4,250
	HORN LAKE CREEK & TRIBS (INCL COW PEN CREEK), MS & TN	250	2,120	2,120
	MISSISSIPPI & LOUISIANA ESTAURINE AREAS, MS & LA	3,100	53,000	20,000
*	YAZOO BASIN - MAIN STEM, MS	25	210,000	11
*	YAZOO BASIN - YAZOO BACKWATER, MS	100	208,200	199
	CONSTRUCTION (5 ADDS)	8,275	484,320	26,580
	MAINTENANCE FEATURES			
**	MISSISSIPPI DELTA REGION - CAERNARVON, LA	188	0	0
	MAINTENANCE (1 ADD)	188	0	0
	TOTAL - FC, MR&T (8 ADDS)	8,996	488,785	27,525

* Budgeted in FY 1991 under Maintenance features

** Budgeted in FY 1991 under Construction features

CORPS OF ENGINEERS – CIVIL WORKS
PROJECTS REQUESTED IN FY 1992 BUDGET NOT REQUESTED IN FY 1991 BUD
(DOLLARS IN THOUSANDS)

FY 1992 NEW START	TITLE	FY 92 BUDGET AMOUNT
	OPERATION AND MAINTENANCE, GENERAL	
	NEW ENGLAND DIVISION	
	CONNECTICUT RIVER BELOW HARTFORD, CT	624
	GUILFORD HARBOR, CT	514
	KENNEBEC RIVER, ME	647
	SACO RIVER, ME	747
	NORTH ATLANTIC DIVISION	
	ANACOSTIA RIVER BASIN, DC	198
	CHESAPEAKE & DE CANAL, ST. GEORGES BRIDGE REPL, DE	14,000
	INTRACOASTAL WW, REHOBOTH BAY TO DELAWARE BAY, DE	32
	MISPILLION RIVER, DE	957
	CHESTER RIVER, MD	785
	KNAPPS NARROWS, MD	559
	TWITCH COVE AND BIG THOROFARE RIVER, MD	573
•	SALEM RIVER, NJ	680
	SHOAL HARBOR & COMPTON CREEK, NJ	135
	PORT JEFFERSON HARBOR, NY	135
	SHINNECOCK INLET, NY	260
	BONUM CREEK, VA	123
	NEWPORT NEWS CREEK, VA	190
	POTOMAC RIVER AT ALEXANDRIA, VA	168
	SOUTH ATLANTIC DIVISION	
	BAYOU CODEN, AL	595
	FLY CREEK, AL	225
	CLEARWATER PASS, FL	500
	ESCAMBIA–CONECUH RIVERS, FL	8
	WITHLACOOCHIE RIVER, FL	221
	NEUSE RIVER, NC	133
	BROOKGREEN GARDEN CANAL, SC	70
	NORTH CENTRAL DIVISION	
	BLACK RIVER HARBOR, MI	67
	HAMMOND BAY HARBOR, MI	120
	NEW BUFFALO HARBOR, MI	135
	PORT SANILAC HARBOR, MI – MITIGATION OF SHORE DAMAGE	36
	SAGINAW RIVER, MI – DIKE DISPOSAL	356
	SEBEWAING RIVER, MI	338
	WHITE LAKE HARBOR, MI	274
	GRAND MARAIS HARBOR, MN	155
	PORT WASHINGTON HBR, WI	189
	LOWER MISSISSIPPI VALLEY DIVISION	
	SOUTHEAST MISSOURI PORT, MISSISSIPPI RIVER, MO	93
	SOUTHWESTERN DIVISION	
	BARBOUR CUT TERMINAL CHANNEL, TX	49
	BAYPORT SHIP CHANNEL, TX	97
	GREENS BAYOU CHANNEL, TX	49
	TEXAS CITY SHIP CHANNEL, TX	1,895
	MISSOURI RIVER DIVISION	
	MISSOURI R MASTER MANUAL REVIEW, NE, IA, KS, MO, MT, ND&SD	973

NORTH PACIFIC DIVISION	
CRAIG HARBOR, AK	404
COLUMBIA R. SYSTEM OPERATION REVIEW, WA, OR, ID & MT	1,753
SOUTH PACIFIC DIVISION	
FISHERMAN'S WHARF AREA, CA	230
NEWPORT BAY HARBOR, CA	287
OCEANSIDE EXPERIMENTAL SAND BYPASS SYSTEM, CA	1,300
PETALUMA RIVER, CA	3,280
SAN DIEGO HARBOR, CA	328
SAN FRANCISCO BAY LONG TERM MANAGEMENT STRATEGY, CA	2,419
PACIFIC OCEAN DIVISION	
HONOLULU HARBOR, HI	292
TOTAL – OPERATION & MAINTENANCE, GENERAL (49 ADDS)	38,278

* Budgeted in FY 1991 under General Investigations, PED.

CORPS OF ENGINEERS – CIVIL WORKS
PROJECTS REQUESTED IN FY 1992 BUDGET NOT REQUESTED IN FY 1991 BUDGET
(DOLLARS IN THOUSANDS)

FY 1992 NEW START	TITLE	FY 92 BUDGET AMOUNT	TOTAL FEDERAL COST	TOTAL NON-FED COST
	CONSTRUCTION GENERAL			
	NEW ENGLAND DIVISION			
	REVERE BEACH, MA	300	6,695	3,806
	TOWN BROOK, QUINCY AND BRAINTREE, MA	8,550	29,550	9,850
	CONNECTICUT R BAS, TOWNSHEND & BALL MOUNTAIN DAMS, VT	800	1,500	0
	NORTH ATLANTIC DIVISION			
* NEW	BAYOU LA BATRE, AL	500	5,148	13,552
**	FORT PIERCE HARBOR, FL	3,956	6,685	2,565
	PORT SUTTON CHANNEL, FL	670	1,420	1,870
**	GULFPORT HARBOR, MS	6,000	30,302	16,398
	DELAWARE R IN THE VIC OF CAMDEN, NJ (BECKETT ST. TERM)	1,279	4,500	2,110
	SHINNECOCK INLET, NY	631	16,900	5,400
	OHIO RIVER DIVISION			
* NEW	OLMSTED LOCKS & DAM, IL & KY	11,400	1,070,000	0
**	CENTER HILL DAM, TN (DAM SAFETY)	1,700	14,700	0
**	EAST LYNN LAKE, WV	48,400	86,288	0
	NORTH CENTRAL DIVISION			
NEW	ILLINOIS WATERWAY, 4 LOCKS, IL (REHAB)	8,200	12,200	0
NEW	MISSISSIPPI RIVER, DAMS 11–18, 21 & 22, IL, IA & MO (REHAB)	4,510	24,000	0
NEW	MISSISSIPPI RIVER, LOCK & DAM 13, IL & IA (REHAB)	2,100	13,000	0
NEW	MISSISSIPPI RIVER, LOCK & DAM 15, IL & IA (REHAB)	4,800	17,040	0
NEW	MISSISSIPPI RIVER LOCKS & DAMS 2–10, MN, WI & IA (REHAB)	8,220	17,469	0
*	ST PAUL, MN	3,000	11,700	6,800
	RENO BEACH HOWARD FARMS, OH	2,150	6,344	1,781
	LOWER MISSISSIPPI VALLEY DIVISION			
	MERAMEC RIVER BASIN, VALLEY PARK LEVEE, MO	700	10,566	3,934
	SOUTHWESTERN DIVISION			
	ALAMOGORDO, NM	400	27,300	9,100
* NEW	BRAZOS ISLAND HARBOR, TX	1,000	19,400	15,460
**	SAM RAYBURN DAM AND RESERVOIR, TX (DAM SAFETY)	950	38,200	0
	MISSOURI RIVER DIVISION			
	BRUSH CREEK, KANSAS CITY, MO	5,170	19,485	22,718
	NORTH PACIFIC DIVISION			
NEW	HOMER SPIT STORM DAMAGE REDUCTION, AK	3,296	9,685	5,215
*	KODIAK HARBOR, AK	10,000	23,478	2,685
NEW	BONNEVILLE POWERHOUSE, OR & WA (REHAB)	8,699	18,127	0
	LOWER COLUMBIA RIVER BASIN BANK PROTECTION, OR & WA	100	25,800	1,500
	ZINTEL CANYON DAM, WA	4,533	8,212	2,736
	SOUTH PACIFIC DIVISION			
	CLIFTON, AZ	2,800	8,480	3,820
	REDONDO BEACH, KING HARBOR, CA	421	5,130	2,770
**	RICHMOND HARBOR, CA	800	12,500	3,550
	YOLO BASIN WETLANDS, SACRAMENTO RIVER, CA	1,800	4,500	1,800
	PACIFIC OCEAN DIVISION			
NEW	ALENAIO STREAM, HI	1,870	7,730	4,330
	KAWAIHAE SMALL BOAT HARBOR, HI	130	4,980	2,690
11	TOTAL – CONSTRUCTION, GENERAL (35 ADDS)	158,734	1,611,117	144,373

* Budgeted in FY 1991 under General Investigations, PED.

** Budgeted in FY 1991 under Operation and Maintenance, General.

CORPS OF ENGINEERS – CIVIL WORKS
PROJECTS REQUESTED IN FY 1992 BUDGET NOT REQUESTED IN FY 1991 BUDGET
(DOLLARS IN THOUSANDS)

FY 1992 NEW START	TITLE	FY 92 BUDGET AMOUNT	TOTAL PED COST
	GENERAL INVESTIGATION – PED		
	NEW ENGLAND DIVISION		
*	MASSACHUSETTS COASTAL, ROUGHANS PT, REVERE, MA	260	1,295
	NORTH ATLANTIC DIVISION		
	DELAWARE RIVER MAIN CHANNEL, NJ, PA & DE	2,000	6,000
*	CURWENSVILLE LAKE, PA – REALLOCATION	800	2,000
NEW	VIRGINIA BEACH, VA (HURRICANE PROTECTION)	600	6,010
	SOUTH ATLANTIC DIVISION		
*	BREVARD COUNTY, FL	110	120
NEW	MARTIN COUNTY, FL	350	650
NEW	NASSAU COUNTY, FL	350	700
	TAMPA BAY, FL (COASTAL AREAS)	150	750
*	ARECIBO RIVER, PR	300	1,300
NEW	RIO GRANDE DE LOIZA, PR	350	2,500
	OHIO RIVER DIVISION		
	BEAVER CREEK BASIN, KY	50	1,100
	NORTH CENTRAL DIVISION		
NEW **	GRAND HAVEN HARBOR, MI	225	925
	ONONDAGA LAKE, NY	225	1,000
	OTTAWA RIVER HARBOR, OH	400	1,199
	LOWER MISSISSIPPI VALLEY DIVISION		
*	EAST BATON ROUGE PARISH, LA	450	1,200
	WEST BANK – EAST OF HARVEY CANAL, LA	100	6,200
	SOUTHWESTERN DIVISION		
	CYPRESS CREEK, TX	1,000	6,300
	DALLAS FLOODWAY EXTENSION, TRINITY RIVER PROJ, TX	400	4,180
	GIWW–SARGENT BEACH, TX	450	1,400
NEW	HALLS BAYOU (HOUSTON), TX	300	1,700
NEW	HUNTING BAYOU (HOUSTON), TX	300	1,300
	NORTH PACIFIC DIVISION		
*	COOS BAY, OR (DEEP DRAFT NAVIGATION)	455	1,705
	SOUTH PACIFIC DIVISION		
	HOLBROOK, AZ	140	2,219
*	LOWER SANTA CRUZ RIVER, AZ	300	6,230
NEW	CARNEROS CREEK, CA	600	1,200
	LOS ANGELES – LONG BEACH HARBORS, CA	2,000	6,700
*	NOYO RIVER & HARBOR, CA	400	2,550
	TULE RIVER, CA	200	2,950
8	TOTAL – PRECONSTR ENGRNG & DESIGN (29 ADDS)	13,265	71,383

* Budgeted in FY 1991 under Surveys. Budgeted in FY 1992 under PED with different name.

** Budgeted in FY 1991 under Operation and Maintenance, General.

CORPS OF ENGINEERS - CIVIL WORKS
PROJECTS REQUESTED IN FY 1992 BUDGET NOT REQUESTED IN FY 1991 BUDGET
(DOLLARS IN THOUSANDS)

FY 1992 NEW START	TITLE	FY 92 BUDGET AMOUNT	TOTAL FEDERAL COST	TOTAL NON-FED COST
	MISSOURI RIVER DIVISION			
NEW	MRLS, UNIT L-246, CUTOFF LAKE, MO	270	675	405
*	ABERDEEN AND VICINITY, SD	98	252	179
NEW	BIG BEND DAM - LAKE SHARPE (WILDLIFE RESTOR), SD	80	160	0
*	JAMES RIVER ENVIRONMENTAL, SD	235	705	470
NEW	OAHE DAM - LAKE OAHE (WILDLIFE RESTORATION), SD	140	340	0
	VERMILLION RIVER BASIN, SD	145	620	400
	NORTH PACIFIC DIVISION			
*	SEWARD, FOURTH OF JULY CREEK, AK	51	255	155
*	SEWARD, LOWELL CREEK, AK	306	581	431
	COLUMBIA SLOUGH, OR	141	659	409
	WALLA WALLA RIVER, OR & WA	182	700	420
	WILLAMETTE RIVER TEMPERATURE CONTROL, OR	299	600	600
	CHIEF JOSEPH DAM POOL RAISE, WA	188	1,050	771
	LAKE WASHINGTON SHIP CANAL, WA	112	648	398
	JACKSON HOLE RESTORATION, WY	212	1,150	700
	SOUTH PACIFIC DIVISION			
	CENTRAL MARICOPA COUNTY DRAINAGE AREA, AZ	320	1,320	820
	HASSAYAMPA RIVER AT WICKENBURG, AZ	74	790	490
	CALLEGUAS CREEK, CA	220	1,066	655
	COAST OF CA, STORM & TIDALWAVES, S. COAST REGION, CA	480	2,250	2,250
	NORTHERN CALIFORNIA STREAMS, CACHE CK BASIN, CA	200	1,200	720
	RANCHO PALOS VERDES, CA	200	985	575
	SAN JOAQUIN R BAS, ARROYO PASAJERO & CANTUA CK, CA	700	2,087	1,252
	SAN JOAQUIN R BAS, SAN JOAQUIN R MAIN STEM & TRIBS, CA	612	1,875	1,125
	SAN JOAQUIN R. BASIN, CALIENTE CK STREAM GROUP, CA	212	3,389	1,677
	SANTA CRUZ HARBOR SHOALING, CA	310	900	540
	WHITEWATER RIVER BASIN, CA	170	905	555
9	TOTAL SURVEYS (59 ADDS)	15,701	77,526	45,362

* Budgeted FY 1991 reconnaissance studies now in FY 1992 feasibility stage.

CORPS OF ENGINEERS – CIVIL WORKS
PROJECTS REQUESTED IN FY 1992 BUDGET NOT REQUESTED IN FY 1991 BUDGET
(DOLLARS IN THOUSANDS)

FY 1992 NEW START	TITLE	FY 92 BUDGET AMOUNT	TOTAL FEDERAL COST	TOTAL NON-FED COST
	GENERAL INVESTIGATIONS – STUDIES			
	NEW ENGLAND DIVISION			
	HYANNIS HARBOR, BARNSTABLE, MA	50	500	300
NEW	WELLS HARBOR, ME	125	125	0
	NORTH ATLANTIC DIVISION			
	BALTIMORE HARBOR ANCHORAGES & CHANNELS, MD	207	905	585
	BRIGANTINE INLET TO GREAT EGG HBR, NJ (SHORE PROT)	200	1,500	1,000
	TOWNSENDS INLET TO CAPE MAY INLET, NJ	300	750	550
NEW	LEHIGH RIVER BASIN, PA	475	2,775	2,300
	SCHUYLKILL RIVER BASIN, POTTSTOWN AREA, PA	150	700	500
	SCHUYLKILL RIVER BASIN, READING AREA, PA	225	700	500
NEW	SUSQUEHANNA RIVER BASIN FISH RESTOR, PA, NY, & MD	200	700	500
	SOUTH ATLANTIC DIVISION			
	CHOCTAWHATCHEE AND PEA RIVER BASINS, AL & FL	475	2,400	2,000
	PERDIDO KEY BEACHES, FL	277	1,800	1,500
	LOWER SAVANNAH RIVER BASIN, GA & SC	150	400	250
NEW	EAST FORK BASIN FISH & WILDLIFE RESTORATION, MS	82	375	293
	DARE COUNTY BEACHES, NC	100	625	375
	SOUTH CAROLINA SHORES, NORTH PORTION, SC	300	850	600
	OHIO RIVER DIVISION			
	INDIANAPOLIS, WHITE RIVER BASIN, IN	462	2,500	1,145
	EAGLE CREEK, KENTUCKY RIVER, KY	200	1,276	900
	GREEN AND BARREN RIVERS, KY	225	3,550	0
	WEST LIBERTY, KY	225	600	300
	BELMONT AND JEFFERSON COUNTIES, OH	200	700	400
	SAW MILL RUN BASIN, PA	250	1,100	700
•	METRO REGION OF NASHVILLE, TN (MILL CK INTERIM)	250	1,710	950
	METROPOLITAN CHATTANOOGA - HAMILTON CO., TN	274	1,250	750
	WEST VIRGINIA COMP STUDY, WV (OHIO RIV MI 40-317)	124	500	0
	NORTH CENTRAL DIVISION			
NEW	KASKASKIA RIVER BASIN, IL	250	705	455
	CLINTON RIVER SPILLWAY, MI	125	350	205
	SAGINAW BAY AND RIVER MI	125	980	820
	LITTLE FALLS, MN	110	845	435
	WYACONDA RIVER BASIN, MO & IA	97	400	240
	DEVILS LAKE, ND	100	1,351	900
•	VERMILION RIVER, OH	66	469	251
	LOWER MISSISSIPPI VALLEY DIVISION			
	APPLE CREEK, IL	229	1,200	720
	ALGIERS LOCK, LA	570	3,926	0
	JEFFERSON – ORLEANS PARISHES URBAN FC, LA	298	3,131	2,231
	LAKE CATAOUATCHE LEVEE, LA	396	1,762	1,262
•	PORT OF CAMERON, LA	50	808	408
	JEFFERSON COUNTY, MO	124	875	525
	SOUTHWESTERN DIVISION			
NEW	ARKANSAS RIVER WETLANDS AND FC, AR	300	1,000	700
	LITTLE RIVER COUNTY, AR	150	500	300
•	WHITE RIVER AND TRIBUTARIES, AR & MO	200	925	300
	ESPANOLA VALLEY, NM, RIO GRANDE & TRIBS	90	820	520
	BOSQUE RIVER WATERSHED, TX	170	335	265
•	GRAHAM, TX (BRAZOS RIVER BASIN)	110	710	430
	LOWER TRINITY RIVER BASIN, TX	723	3,400	2,000

CORPS OF ENGINEERS - CIVIL WORKS
PROGRAMS AND SPECIAL INITIATIVES REQUESTED IN FY 1992 BUDGET *
NOT REQUESTED IN FY 1991 BUDGET
(DOLLARS IN THOUSANDS)

FY 92 NEW PROGRAM OR INITIATIVE	TITLE	FY 92 BUDGET AMOUNT	TOTAL FEDERAL COST	TOTAL NON-FED COST
	PROGRAMS			
NEW	Collec & Study of Basic Data - - Remote Sensing/Geographic Information System Support	150	1,350 (a)	N/A
	Section 933 - 1986 WRDA	1,000	(b)	(b)
NEW	Beach Disposal (Section 933)	800	N/A	N/A
NEW	Environmental Review Guide for Operations	2,500	N/A	N/A
NEW	Water Control Research Program	675	N/A	N/A
	TOTAL - PROGRAMS (5)	4,925	1,350	N/A
	INITIATIVES			
	ENVIRONMENTAL RESTORATION.			
NEW	Economics of Global Climate Change Study	400	1,000 (c)	N/A
NEW	Coastal America Partnership	7,000	14,000	4,667
NEW	Wetlands Action Plan and Demonstration Program	1,000	1,000	N/A
	TOTAL - ENVIRONMENTAL RESTORATION INITIATIVES (3)	8,400	16,000	4,667
	INFRASTRUCTURE IMPROVEMENT.			
NEW	Environmental Service Privatization - Special Study	1,000	5,500	N/A
	TOTAL - INFRASTRUCTURE IMPROVEMENT INITIATIVES (1)	1,000	5,500	0
	TOTAL INITIATIVES (4)	9,400	21,500	4,667
	TRUST FUNDS (CONTRIBUTIONS)			
NEW	Coastal Wetlands Restoration Fund	34,012 (d)	187,337 (e)	36,200 (e)

* Excludes studies and projects which are included under study/project listings.

(a) Total five-year program estimated Federal cost.

(b) 50/50 cost sharing of increased cost over alternative disposal methods of beach-quality sand onto beaches.

(c) Total two-year program estimated Federal cost.

(d) Allocated share of appropriation from the Sport Fish Restoration Account (Small Engine Fuel receipts) for long-term conservation, protection and restoration of coastal wetlands in the state of Louisiana.

REMOTE SENSING/GEOGRAPHIC SYSTEM SUPPORT

Senator JOHNSTON. What are the long range plans, goals and costs for the Remote Sensing/Geographic System Support program?

General HATCH. The Remote Sensing Geographic Information Systems Support Program is being set up to facilitate the most effective transfer of remote sensing and spatial data management technology to the Corps field offices for the execution of their diverse water resources engineering and environmental missions. The program will facilitate the use of the most appropriate available commercial, academic, other agency and other Corps office capabilities and resources for specific field office projects and operations functions as well as introducing emerging technologies as they become available. Long range goals are for this program to become nearly self-sustaining by customer reimbursement for services, with a minimum of operational base funding support. Funding requested for fiscal year 1992–96, $1.25 million, is to implement the program and generate the necessary momentum and architecture for a customer supported long term capability. Base level funding beyond fiscal year 1996 will be addressed on the basis of the performance and return-on-investment demonstrated by the initial program. The goal is to provide through a small but highly focused program, a continuing mechanism that ensures broad and coordinated use within the Corps of all available commercial and government capabilities to exploit current and emerging technologies in the remote sensing and GIS areas for the Corps district offices.

MAGNETIC LEVITATION

Senator JOHNSTON. Does the Corps have sufficient authority to utilize the $8 million requested in the fiscal year 1992 budget for the Magnetic Levitation Transportation program? The funding request for 1992 is 4 times the allocation for 1991. Why is such a large increase in just one year justified?

General HATCH. Section 417(e) of the Water Resources Development Act of 1990 (Public Law 101–640) states that no funds are authorized to be appropriated to the Secretary of the Army after the fiscal year 1991 to carry out Section 417, which authorizes the Secretary to undertake research and development activities for a magnetic levitation transportation system (Maglev). This language limits the Corps' ability to fund its participation in the National Maglev Initiative, unless the Congress enacts legislation that evidences intent to continue funding the Corps program. The Administration intends to submit legislation in the Civil Works Legislative Program for the fiscal year 1992 to overcome the limitation in Section 417(e).

There has been significant interest among the Administration, members of Congress and the private sector in developing and implementing an advanced Maglev system in the U.S. by the year 2000. There are many issues relating to the technology, environment, economics, potential markets, cost-sharing, financing, institutional barriers and determining the appropriate roles for the Federal and non-Federal sectors in the development and implementation of Maglev systems which must be investigated before a recommendation and decision can be made. The funding request for the Corps to receive $8 million in fiscal year 1992 will allow us to continue the process started in 1991. Inadequate funding will hinder the Corps from obtaining the information necessary to address the significant issues and being prepared to assist in and/or manage the implementation of future Maglev systems in the U.S.

MINIMUM DREDGE FLEET

Senator JOHNSTON. What is the current status and schedule for completing the Minimum Dredge Fleet Study. When will the Corps recommendations be made?

General HATCH. The first draft of the study has been completed and is being reviewed at Headquarters. Upon completion of this review, it will be circulated to all interested parties for their comments. These comments will be taken into consideration in preparing the final report. Recommendations regarding the minimum fleet will be made in the September 1991 time frame.

Senator JOHNSTON. What is the justification for requesting funds in fiscal year 1992 to initiate design or construction of new dredges prior to the completion of the minimum fleet study?

General HATCH. The Corps included requests to proceed with replacement of three dredges in its fiscal year 1992 program so that their replacement would not be delayed if the study reaffirms the requirement for them. In the case of the proposed replacement for the Dustpan Dredge POTTER, the timing is especially important. The Corps plans to construct the POTTER replacement to the same design being used for the Dustpan Dredge HURLEY, which is currently under construction. By initiating the POTTER replacement as soon as possible we expect to realize significant savings in design costs, since fewer modifications will be required in the design because of technological changes and other factors. Except to continue construction of the HURLEY, funds will not be allocated for replacement of any dredge until the minimum fleet study is complete.

CONTINUING AUTHORITIES PROGRAM

Senator JOHNSTON. What is the rationale for terminating several of the Continuing Authority programs in the 1992 budget?

General WILLIAMS. We feel that projects of this size and cost are not beyond the abilities of local entities to undertake themselves. Therefore, we propose phasing out these programs in order to apply our limited resources to projects which are more clearly beyond the ability of local entities to carry out.

Senator JOHNSTON. What steps has the Corps taken to carry out the directions of Congress in the Dire Emergency Supplemental passed earlier this year?

General WILLIAMS. The fiscal year 1991 Dire Emergency Supplemental directed that the Corps continue, in fiscal year 1991, work terminated in anticipation of the phase out. On 26 April 1991, a letter was sent to all Divisions instructing them that all activities terminated due to the proposed phase down are to be reactivated. To the extent possible with fiscal year 1991 funds, we will resume all phases of the Continuing Authorities program. The proposed phase down is now scheduled to begin in fiscal year 1992.

INLAND WATERWAY USERS BOARD

Senator JOHNSTON. Why is the budget request for support for the Inland Waterway Users Board increasing from $83,000 in 1991 to $160,000 in 1992? Provide a breakout of the budget request by object class compared to the 1991 allocation and the actual amount for 1990.

General **WILLIAMS**. The fiscal year 1991 Energy and Water Development Appropriations Act allocated a total of $185,000 for the Inland Waterway Users Board; $25,000 for Board expenses and $160,000 for Corps expenses. However, the Board's allocation for fiscal year 1991 was reduced by $18,000 for savings and slippage and by $84,000 due to unobligated carryover from fiscal year 1990 for a net allocation of $83,000. Therefore, the total funds available in fiscal year 1991 is $167,000. The carryover of fiscal year 1990 funds resulted from inadvertently charging personnel costs to the General Expense account in fiscal year 1990.

The following table provides the breakdown of actual cost for fiscal year 1990, estimated cost for fiscal years 1991 and 1992:

INLAND WATERWAY USER BOARD EXPENSES

	Fiscal year—		
	1990	1991	1992
Budget:			
User Board	$20,000	$25,000	$30,000
Corps	100,000	160,000	160,000
Total	120,000	185,000	190,000
Breakdown by account:			
Federal salaries	8,000	118,000	131,000
Travel and per diem:			
Federal		21,000	19,000
Non-Federal	18,000	15,000	26,700
Other (meetings, transcript, printing, etc.:			
Federal		10,000	10,000
Non-Federal	5,000	3,000	3.300
Total	31,000	167,000	190,000

SECTION 1135 PROGRAM

Senator **JOHNSTON**. Provide a breakout of the 1992 budget request of $7.5 million for the Section 1135 program showing the amount requested for each project.

General **WILLIAMS**. The Section 1135 program budget request is programmatic, rather than project specific. Funding is allotted to specific projects after appropriations are available. With fiscal year 1991 appropriations, we have funded 24 feasibility studies to date and are continuing to initiate studies as requests are received and approved and funding allows. We will not have accurate construction cost estimates until the feasibility reports are completed, beginning later this year. To date $1,205,100 has been allocated to initiate 24 studies. A list of these studies follows:

Section 1135(b) projects funded to date in fiscal year 1991

[In thousands of dollars]

Project	*Amount*
Narrows Dam, Lake Greeson, AR	24.0
Charles River Dam Fish Passage, MA	125.0
Garrison Dam, Lake Sakakawea, ND	50.0
Missouri River Bank Stabilization, NE	88.0
Chester River, Kent/Queen Annes Counties, MD	100.0
Oswego Harbor, NY	20.0
Sandusky Bay, OH	20.0
Marsh Lake, Lac Qui Parle, MN	10.0
Homme Lake, ND	8.0
Orwell Lake, MN	30.0
Jackson Hole Project, WY	45.0
Fern Ridge Lake, Long Tom River, OR	50.0
Center Hill Lake, TN	55.0
Cordell Hull Lake, TN	20.0
Barkley Dam, KY	45.0
Walter F. George Lock and Dam, AL amd GA	47.0
Hartwell Lake, GA and SC	27.9
J. Strom Thurmond Lake, GA amd SC	26.1
Savannah Harbor, SC and GA	200.0

Project	*Amount*
Redwood Creek Project, CA	40.0
North Fork Feather River near Chester, CA	60.0
Gulf Intracoastal Waterway, Laguna Madre, TX	25.0
Ferrells Bridge Dam/Lake O'the Pines, TX	12.0
Salt Bayou, McFadden Ranch Wetlands, TX	77.0

Senator JOHNSTON. What criteria are used to select projects for inclusion in this program?

General WILLIAMS. The criteria used to select the projects include the statutory requirements that the projects must be for modification of a constructed project consistent with the authorized project purpose(s) and for the improvement of the environment. The emphasis is on the restoration of habitat that could be expected to sustain modern historic levels of fish and wildlife resources. There must be a clear connection between the proposed modification and the original project with minimal acquisition of additional lands. The modification must have tangible and intangible benefits judged to exceed the tangible and intangible costs, and there must be a non-Federal sponsor willing to provide 25 percent of the implementation cost and 100 percent of the incremental operation, maintenance, repair and replacement cost. Because of the limited program resources we have initially set a federal limit of $2 million per project.

WETLANDS RESEARCH PROGRAM

Senator JOHNSTON. The Wetlands Research Program is increasing from about $3 million in 1991 to $11 million in 1992. What is the justification for such a large increase in one year? How does this program differ from the Wetlands Action Plan and Demonstration Program, and the Coastal America Partnership program?

General HATCH. The justification for the large increase in funding for the Wetlands Research Program in fiscal year 1992 over fiscal year 1991 is that fiscal year 1991 is the start-up or planning and coordination year for the approved three-year program. Three years is a very short time for accomplishing a major R&D program such as this. Fiscal year 1992 is the second year of the program and the time when most of the field activity will take place gathering data at 43 demonstration sites chosen to address 16 different field level problems in the most costly task areas of the program which address restoration and stewardship of Wetlands. The Wetlands Research Program differs from the Wetlands Action Plan and Demonstration Program in that the former is research and development targeted at determining and advancing state-of-the-art techniques and providing guidance for addressing various Wetlands related issues. The wetland action plan demonstration program is not Research and Development but rather will result in a plan of what the Corps of Engineers can do to enhance Wetland goals as required in Sections 307a and 307d of the Water Resources Development Act of 1990. The plan would recommend a wetlands mitigation banking demonstration program aimed at selecting not less then two sites and would also recommend any authorization necessary to implement it. The interim goal is to ensure no overall net loss of the Nation's Wetlands base and the long term goal is to increase the quality and quantity of the Nation's Wetlands. The Coastal America Partnership program similarly is not a research and development effort. It is a partnership program among Federal agencies with various responsibilities for coastal environments. It includes the broad range of coastal environments, not just Wetlands, and is designed to use available technology to improve and restore degraded habitat, better manage contaminated sediments and to lessen nonpoint source pollution.

Senator JOHNSTON. How much of the $1 million requested for the Wetlands Action Plan and Demonstration Program is for development of an action plan?

General HATCH. Sir, according to our current program schedule, an estimated $150,000 would be used for the action plan portion of this budget item in fiscal year 1992. Much of the preliminary work will have already been accomplished with available funds in FY 1991 to meet the November, 1991, deadline which was established in Section 307(a) (3) (C) of the Water Resources Development Act of 1990. Consistent with the Conference report and part (D) of the same section of the authorizing act, the remainder of the funds are proposed to initiate a study to evaluate the feasibility of a wetlands mitigation banking demonstration program for future consideration by the Congress.

Senator JOHNSTON. How does the demonstration portion of this program differ from the Coastal America Partnership program?

General HATCH. Mr. Chairman, the demonstration portion of this budget item is designed to examine ways in which the concept of Wetlands Mitigation Banking (WMB) can be applied to our on-going water resources program. The WMB concept allows for the advanced compensation of anticipated wetland losses due to developmental activities through the creation, restoration or preservation of other wetlands of equivalent value located in the same essential region or ecosystem. On the other hand, the Coastal America Partnership is not intended to serve as a vehicle for accomplishment of mitigation. Rather, it is a way of capitalizing on the collective assets of the Environmental Protection Agency, National Ocean and Atmospheric Agency, National Ocean Service's Office Charting and Geodetic Services. Fish and Wildlife Service, and the Corps of Engineers, along with the coastal states, to address the three most common environmental problems plaguing our coasts, through three approaches that would: (a) better manage contaminated sediments, (b) improve degraded habitat, including, but not limited to wetlands, and (c) implement best management practices to lessen non-point source pollution.

ENVIRONMENTAL PROGRAM

Senator JOHNSTON. Provide a complete list of each environmental and wetland program requested in the 1992 budget, including the amount requested for each program and a brief description of each activity. What are the pros and cons of consolidating into a single line item the environmental and wetland related activities?

General HATCH. I will provide for the record a comprehensive summary of the Corps Civil Works Environmental Program for fiscal year 1992. (The information is attached)

In the last two years we have begun to closely examine the environmental aspects of our overall budget in response to increasing Congressional and public interest. We have not yet separated wetland activities from the other aspects of our environmental program, although they do comprise a significant proportion of our water resources development activities. However, given the numerous environmental statutes with which the Corps must comply in the conduct of its activities we believe it would be advantageous for us to highlight the various environmental components of our program, e.g., expenditures under wetland activities, endangered species activities, historic and cultural activities, fish and wildlife restoration activities, etc. In this way we would be better able to assess the contributions our program is making to restore and improve our nation's environmental resources. Currently, many of the environmental activities are buried within individual project summaries; thus, it is very difficult to accurately assess the effect our programs are having upon the various aspects of the environment from year to year. The disadvantage of disaggregated analysis is that it requires a great deal of effort to accurately characterize and present the nature of the outputs. Nevertheless, because of the project-based nature of the Corps program, I believe that it would be better for the Corps to continue refinement of its environmental program as described than to consolidate it into a single line item.

U.S. ARMY CORPS OF ENGINEERS

CIVIL WORKS ENVIRONMENTAL PROGRAM

- FISCAL YEAR 1992 BUDGET -
ENVIRONMENTAL PROJECTS PROGRAMMED FOR WORK IN FY 92

SUMMARY:

FOCUS ON THE ENVIRONMENT (TOTAL)..................$	**262,424,000**
MITIGATION....................................	**110,384,000**
General Investigations..................	300,000
Construction, General...................	76,082,000
Operations and Maintenance..............	34,002,000
PROTECTION AND RESTORATION...................	**152,040,000**
General Investigations..................	4,401,000
Construction, General...................	39,178,000
Operations and Maintenance..............	22,461,000
Regulatory Program......................	86,000,000
OTHER MISSION RELATED ENVIRONMENTAL WORK (TOTAL)..$	
GENERAL ENVIRONMENTAL ACTIVITIES.............	**67,236,000**
General Investigations..................	4,684,000
Construction, General...................	5,057,000
Operations and Maintenance..............	52,595,000
Environmental Agency Coordination.......	400,000
Environmental Research & Development....	4,500,000
OTHER...	**284,400,000**
Breaux Bill (Trust Receipts)............	34,000,000
Environmental Support for Others........	250,400,000

FOCUS ON THE ENVIRONMENT

MITIGATION

General Investigations

o Richard B. Russell Dam and Lake, GA & SC - Wildlife mitigation.	$ 300,000
Sub-total $	300,000

Construction, General

o Columbia River Juvenile Fish Mitigation, WA, OR, & ID	31,700,000
o Tennessee-Tombigbee Waterway, Wildlife Mitigation, AL & MS	10,000,000
o Yazoo Basin Reformulation Study (MR&T), MS	3,200,000
o Yazoo Backwater F&W Mitigation Lands (MR&T), MS	500,000

MITIGATION

Construction, General (continued)

o Cooper Lake and Channels, TX - Continue habitat development for F&W.	2,200,000
o Santa Ana River Mainstem Mitigation, CA - Mitigation plantings.	1,037,000
o Little Dell Lake, F&W Mitigation, UT	50,000
o Lower Snake River F&W Compensation Plan, ID, OR, & WA	13,100,000
o Atchafalaya Basin Floodway (MR&T), LA - Land acquisition for f&w facilities.	9,700,000
o Red River Waterway, LA - F&W mitigation.	2,005,000
o Dry Creek (Warm Springs) Lake, CA - Fish hatchery expansion.	2,060,000
o Gallipolis Lock & Dam, WV & OH - F&W mitigation.	530,000
Sub-total $	76,082,000

Operations and Maintenance

o Management of Natural Resources	33,367,000
(Management of Natural Resources, MR&T) - Natural resources mgt. at Corps projects.	635,000
Sub-total $	34,002,000

PROTECTION AND RESTORATION

General Investigations

o Wells Harbor, ME - Wetlands restoration project	125,000
o Calleguas Creek, CA - Protection of wetlands, endang. species.	220,000
o Lower Savannah River, GA - Wetlands protection.	150,000
o Lower Las Vegas Wash Wetlands, NV	350,000

PROTECTION AND RESTORATION

General Investigations (continued)

o	Mermentau, Vermillion, and Calcasieu Rivers, Grand and White Lakes Water Mgt. Study, LA	427,000
o	Red Lake-Clearwater Rivers, MN - Study for wetlands restoration, fisheries.	155,000
o	St. Francis River Fish & Wildlife Study (MR&T), AR & MO - Study for f&w enhancement.	230,000
o	James River, SD - Environmental restoration study.	235,000
o	Big Bend Dam-Lake Sharpe Wildlife Restoration, SD	60,000
o	Missouri River Levees, Unit L246 Cutoff Lake, MO - F&W restoration.	270,000
o	Oahe Dam- Lake Oahe, SD - Wildlife restoration.	140,000
o	Jackson Hole, WY - Study for F&W habitat restoration.	212,000
o	Cuivre River Area, MO	210,000
o	Alexander and Pulaski Counties, IL	310,000
o	Arkansas River Wetlands & Flood Control, AR	300,000
o	Kaskaskia River Basin, IL	250,000
o	East Fork Basin Study, MS	82,000
o	Lehigh River Basin, PA	475,000
o	Susquehanna River Basin, Fish Restoration, PA	200,000
	Sub-total $	4,401,000

Construction, General

o	Project Modifications, Section 1135 - Environmental restoration.	7,500,000

PROTECTION AND RESTORATION

Construction, General (continued)

o MS and LA Estuarine Areas (MR&T), LA & MS - Continue construction of Bonnet Carre' diversion.	3,100,000
o Yolo Basin Wetlands, Sacramento River, CA - Wetlands restoration.	1,600,000
o Upper Miss. River, Environmental Management Program, IL, IA, MN, & MO	19,455,000
o Miss. River Delta Region (MR&T), LA & MS - Continue Davis Pond and Caernarvon freshwater diversions.	4,200,000
o Ray Roberts Lake, TX - Wetland construction.	50,000
o Big Sunflower River (MR&T), MS	38,000
o Upper Yazoo River Basin Projects (MR&T), MS	3,235,000
Sub-total $	39,178,000

Operations and Maintenance

o Calcasieu River and Pass, LA - Marsh creation with dredged material.	3,665,000
o Miss. River Between Ohio & Missouri Rivers, IL	80,000
o St. Francis River Basin, Wappapello Lake (MR&T), MO	33,000
o Arkabutla, Enid, Sardis, Grenada Lakes (MR&T), MS	683,000
o Wetlands Research Program (R&D)	11,000,000
o Coastal America Partnership - Partnership with other Fed., state agencies to protect, restore envir.	7,000,000
Sub-total $	22,461,000

PROTECTION AND RESTORATION (continued)

Regulatory

o Regulatory Program - Sec. 404, Clean Water Act, Sec. 10 of 1899 River & Harbor Act, and Sec. 103 of the MPRSA.	$ 86,000,000

OTHER MISSION RELATED ENVIRONMENTAL WORK

GENERAL ENVIRONMENTAL ACTIVITIES

General Investigations

o Upper Mississippi River Navigation Study, IL, IA, MN & MO - Study of env. impacts of navigation.	1,200,000
o Columbia River Treaty Fishing Access, WA & OR - Planning and design of fishing access.	785,000
o Coast of California, South Coast Region, CA - Study of coastal processes, data collection.	400,000
o Willamette River Temperature Control, OR - Temperature controls at Blue R. & Cougar Dams.	299,000
o Onondaga Lake, NY - Study of water quality enhancement.	225,000
o Sacramento-San Joaquin Delta, CA - Salt water intrusion study.	350,000
o San Joaquin River Basin, Arroyo Pasajaro, CA - Study asbestos contamination in water.	700,000
o GIWW, Aransas National Wildlife Refuge, TX - Study to protect Whooping Cranes.	625,000
o Lower Truckee River, NV - Habitat improvement for endang. fishes.	100,000
Sub-total $	4,684,000

GENERAL ENVIRONMENTAL ACTIVITIES (continued)

Construction, General

o	Sacramento Urban Area Levee Reconstruct., CA	800,000
o	Sacramento River Bank Protection, CA - Continue riparian vegetation plantings.	510,000
o	Conn. River Basin, Townsend & Ball Mt. Dams, VT	600,000
o	Beaver Lake, AR - Water quality management study.	1,000,000
o	Sweetwater River, CA - Wetland creation, F&W habitat.	2,147,000
	Sub-total $	5,057,000

Operations and Maintenance

o	Water Quality Analysis and Studies (Water Quality Studies for MR&T projects) - Studies for reservoir, river water quality improvements.	7,429,000 153,000
o	Environmental Dredging and Monitoring Studies (Env. Dredging and Monitoring, MR&T) - Environmental data for design, engineering.	16,834,000 36,000
o	Operation of Fish Hatcheries and Facilities - Hatchery operations, including egg taking.	14,921,000
o	Fishery and Wildlife Development Activities - F&W studies on Corps project lands.	1,811,000
o	San Francisco Bay Long Term Management Strategy	2,419,000
o	Management of Archaeological, Cultural Resources (Management of Archaeol., Cul. Resources, MR&T)	3,224,000 95,000
o	Protection, Recovery of Archaeol. Resources (Protection, Recovery of Archaeol. Res., MR&T)	1,464,000 95,000
o	Environmental Review Guide for Operations	2,500,000
o	Wetlands Action Plan & Demo Program _ Wetlands creation, under WRDA '90	1,000,000

GENERAL ENVIRONMENTAL ACTIVITIES

Operations and Maintenance (continued)

o Correction of Sanitary Facilities at Projects	614,000
Sub-total $	52,595,000

ENVIRONMENTAL AGENCY COORDINATION

o National Estuary Program - Support for Corps participation.	200,000
o North American Waterfowl Management Plan - Support for Corps participation.	200,000
Sub-total $	400,000

ENVIRONMENTAL RESEARCH & DEVELOPMENT

o Long Term Effects of Dredging (R&D) - Techniques of contaminated sediment cleanup.	1,100,000
o Environmental Impact Research Program - Impact prediction and quantification.	1,850,000
o Water Quality Research Program - Techniques to improve water quality.	650,000
o Economic Impact of Global Warming	400,000
o Nonindiginous Aquatic Nuisance Prevention and Control - Zebra mussel control techniques.	500,000
Sub-total $	4,500,000

COASTAL WETLANDS RESTORATION PROGRAM (BREAUX BILL)

o Coastal Wetlands Restoration Program - Program to restore coastal wetlands funded by Trust Receipts (Breaux Bill).	34,000,000

ENVIRONMENTAL SUPPORT FOR OTHERS

o Department of Interior, Everglades Nat. Park - Design, construct water delivery system to Everglades National Park, Florida.	11,200,000
o EPA Great Lakes National Program Office - MOA to improve environment of the Great Lakes.	1,700,000
o EPA Superfund Program	200,000,000
o EPA Construction Grant Program	14,000,000
o Puerto Rico Aquaduct and Sewer Authority - Provide technical assistance.	1,000,000
o Department of Energy - Hazardous and radioactive waste cleanup.	22,500,000
Sub-total $	250,400,000

REMR–II AND CPAR GOALS AND OBJECTIVES

Senator JOHNSTON. Are goals and objectives of the REMR-II program similar to those of the CPAR program? Why shouldn't the REMR-II program be structured like the CPAR program?

General HATCH. REMR-II and CPAR have different objectives. The objective of the REMR-II program is to develop cost-effective technologies for the repair, rehabilitation and maintenance of civil works facilities and is structured to respond to problems identified by Corps field team members. The primary use of the technologies is by the Corps on Corps projects. The objective of the CPAR program is to develop advanced technologies that will enhance U.S. construction industry productivity and provide benefit to the Corps overall construction and operation missions. The primary use of CPAR products will be by the construction industry and applicable to a broader range of project types. The construction industry will probably not be interested in cost-sharing REMR-II projects, because they are very specific to maintenance and rehabilitation of Corps projects. In contrast, they are very interested in sharing costs of the CPAR program.

REGULATORY PROGRAM

Senator JOHNSTON. What, specifically accounts for the $15,000,000 increase in the Regulatory Program over last years level?

General HATCH. Mr. Chairman, first, I should explain that the increase from fiscal year 1991 to fiscal year 1992 is actually $11.9 million, if you consider that our fiscal year 1991 program included $4 million unobligated Bridge Administration funds in addition to the $71.1 million appropriation. The increase is prompted by two things; an increase in the backlog of applications and the growing need to insure there is compliance with the permits that we issue. The backlog is attributable to the increased difficulty associated with evaluating applications we are now receiving, compared to those received a few years ago, and to a more sensitive national perspective about wetlands values, which resulted in increased inquiries concerning our jurisdiction. There is also a growing number of permits that have been issued with mitigation and protective measures, which need to be monitored to insure the effectiveness of those measures.

Senator JOHNSTON. How is the employment level expected to increase over the current year?

General HATCH. In 1990, the Assistant Secretary established a goal of increasing staffing in the Regulatory Program 25 percent by the end of 1993. The initial 15 percent is programmed to take place during fiscal year 1991. We are proposing to increase staffing levels by 5% over that of fiscal year 1991. Our plan is to increase another 5% in fiscal year 1993, which would achieve the goal of 25% increase over the staffing level of fiscal year 1990. These increases do not take place as an increase in the Corps staffing ceiling, but instead are a shifting of resources internally.

Senator JOHNSTON. What has been the level of departures and new hires in this program over the past 5 years?

General HATCH. In general the national turnover rate has been about the same as the rest of the Corps. However, a significant number of those leaving have been seasoned project mangers. This means that there is a loss in productivity while replacements are trained and gain experience. There have also been more severe regional hiring problems in areas with a high cost of living that aggravate the turnover of regulatory staff.

Senator JOHNSTON. How realistic is it that the program will be fully staffed by the end of 1992?

General HATCH. Staffing is the high priority in terms of using increased regulatory funding. However, hiring procedures are time consuming. Finding qualified individuals and reallocating resources from one program to another are difficult tasks. In any case, I would hesitate to use the phrase "fully staffed," since that is a function of future workload.

Senator JOHNSTON. How many of the additional FTE's do you expect to actually hire in fiscal year 1992?

General HATCH. We hope to fill all the approximately 50 FTE's that would be added in fiscal year 1992. There is no way to project how many of those would be new hires, as opposed to a transfer of existing employees.

REGULATORY PROGRAM—BUDGET HISTORY

Senator JOHNSTON. Provide a breakout of the budget by object class, and chart showing a comparison of the budget request and the appropriation by activity over the past 5 years.

General HATCH. Mr. Chairman, I will be pleased to provide that information for the record.

[The information follows:]

REGULATORY PROGRAM -- FIVE YEAR BUDGET HISTORY

(In thousands of dollars)

Code	Program or Classification Title	Fiscal Year *				
		1988	1989	1990	1991	1992
	Activities	1/				
.01	Permit Evaluation		43,689	48,327	53,830	62,400
.03	Environmental Impact Statements		2,000	1,100	650	500
.05	Enforcement		13,000	13,900	18,750	21,500
.07	Studies		1,300	1,500	1,850	2,100
.09	Other Regulations		500	600	520	500
	Proposed Bridge Administration		---	*4,000*	---	---
	Sub-Total		60,489	69,427	75,600	87,000
	Net Unobligated Balance		(62)	0	(500)	(1,000)
	Total Budget Request	55,262	60,427	69,427	75,100	86,000
	Object Classification	1/				
	Personnel compensation					
11.1	Full-Time permanent		28,581	33,145	43,199	43,472
11.3	Other than Full-Time permanent		2,858	9,152	3,469	2,163
11.5	Other personnel compensation		1,261	205	1,033	838
12.1	Civilian Personnel Benefits		4,155	4,970	8,268	9,320
21.0	Travel and Transportation of Persons		960	1,050	2,100	2,350
22.0	Transportation of things		200	100	110	190
23.1	Rental payments to GSA		1,274	1,140	1,345	1,745
23.2	Rental payments to others		20	153	210	355
23.3	Communications, utilities, & Misc charges		2,620	620	705	865
24.0	Printing and reproduction		1,730	430	590	670
25.0	Other Services		14,411	12,387	11,466	22,737
26.0	Supplies and materials		1,540	740	1,835	1,535
31.0	Equipment		879	510	590	510
32.0	Land And Structures			825	680	250
	Proposed Additional for Bridges		---	*4,000*	---	---
	Total Program	1/	60,489	69,427	75,600	87,000
	Appropriation	55,262	60,427	69,427	2/ 71,100	Pending

* Amounts are as reported in Budget Appendix for respective years.

1/ The Regulatory Program was included as part of the Operation and Maintenance, General, (O&M) Appropriation account in the President's Budget requests through Fiscal Year 1988 and moved to a separate Appropriation by Act of Congress in Fiscal Year 1988. Until that time, a separate breakdown by Object Classification or Activity was not maintained for the General Regulatory Function while it was a feature of the O&M program.

2/ Since legislation was not enacted transfering the Bridge Administration program to the Corps of Engineers, funds appropriated in Fiscal Year 1990 for this purpose are to be utilized for other Regulatory purposes in Fiscal Year 1991.

Senator JOHNSTON. Now, in order of appearance here, I call first on Senator Nickles.

REORGANIZATION OF THE CORPS

Senator NICKLES. Mr. Chairman, thank you very much. And to Dr. Dickey and General Hatch, I appreciate your appearance before the committee.

General Hatch, I was in Kuwait shortly after the war had stopped and I met several of our Corps people who were engaged in the effort, and I was impressed. They were doing a very good job and had an enormous challenge, still have an enormous challenge with them as well.

To General Hatch or Dr. Dickey, I might follow up on the same line of questions that the chairman talked about concerning restructuring the Corps. I understand from your opening statement that a plan has been submitted. Can you tell us where that is right now? Has it gone to the Secretary of Defense?

Dr. DICKEY. Yes, sir; it rests with the Secretary of Defense, and he has decided, upon his review of that plan, that Corps reorganization should proceed, because of our military and civil components, under a different process than the BRAC process. The latest information I have is that we are now coordinating a legislative proposal within the administration which will be submitted to the Congress shortly. And, at that time, it is contemplated that the Corps' study report, which has been done, would be released also, so that we would have a context, if you will, in which to discuss the reorganization proposal.

Senator NICKLES. Do you know when the Secretary will issue his report?

Dr. DICKEY. I cannot give you a specific date, but certainly we are urging that happen as soon as possible.

Senator NICKLES. Dr. Dickey, how many employees are with the Corps of Engineers right now?

Dr. DICKEY. Forty thousand.

Senator NICKLES. Forty thousand?

Dr. DICKEY. Yes; that is associated with both the civil and military missions and includes both civilian and military personnel.

IMPACT ON TULSA DISTRICT

Senator NICKLES. I had sent you a letter stating some concern about the possibility of the Tulsa District being closed, merged, moved, or whatever. In that letter, I stated there were something like 1,275 permanent employees. That was data from 1988. I now understand that the data in 1991 is that we have 1,100. Today, we have 1,100 out of 40,000. That is just a little over, say, 2.5 percent. For your information, we have 14 percent of the land administered by the Corps. We have 39 reservoirs, not to mention the Kerr-McLellan navigation project, so we have a significant Corps involvement with employees.

I will just tell you I have a real concern about closing or moving or merging that office. And when you say that you are talking about savings—I am interested in savings, but I heard you tell Senator Johnston that you are presently overstaffed. Is there anything in the present law that would prohibit you—if you're overstaffed, from reducing your present level of employees? You don't need to close, move or merge offices. If you have too many employees to provide your function, why don't you reduce the number of employees?

General HATCH. Sir, we do that. However, because our organization has not changed appreciably for the last 50 years—our last major reorganization was in 1942—we find that we have a certain amount of outdated structure. Each one of our district headquarters is somewhat inelastic; to keep it open, we must keep a district engineer, a secretary, some deputies, and a certain amount of staff. Once we've gotten down to that inelastic level in any district headquarters, it's appropriate to go ahead and close the office. Now, we are not touching the field organization you described. We are not addressing the folks actually out on projects. We are just talking about the headquarters overhead and management.

Senator NICKLES. Well, let me again repeat to you. I think if you are overstaffed, you could restructure job functions or titles—that is what you do in the private sector. If you are overstaffed you would make those reductions. But I certainly remain to be convinced that it is a positive thing to move or consolidate all these Corps of Engineers districts. Maybe some would make sense, and I am willing to consider those.

But I happen to be in a parochial mood right now, and I am thinking that in Tulsa, OK, you have very economical housing. I don't know that you are going to be able to move hundreds of employees to any other part of the country and have more economical housing. So those are costs incurred. I want to make sure that if any changes are made that it really does save money.

And again, I am wondering if you have an overstaffed situation why those changes couldn't be made now, make the savings now. If it requires a merger, well, let's look at that, but I don't know that other changes couldn't be made.

REGULATORY PROGRAM

Let me just ask you as well, what percentage of your staff would be working on wetlands and environmental issues today?

General HATCH. Sir, we have about 1,000 involved in the entire regulatory program.

Senator NICKLES. 1,000 out of about 40,000?

General HATCH. Yes, sir.

Senator NICKLES. Do you have any idea what the average time involved in obtaining a wetlands permit is today?

General HATCH. Sir, I don't have that off the top of my head. I would like to provide it for the record. We have, as a target, to do them in less than 60 days, as our basic management goal. In addition to that, we include as many permit actions as we can under more expeditious processes, such as for general permits, so that a lengthy process does not have to apply.

[The information follows:]

DURATION TO OBTAIN WETLANDS PERMIT

Annually about 90 percent of the 50,000 decisions made through nationwide permits, regional general permits, and individual permits are made in 60 days or less.

However, the evaluation and decision on permit applications requiring an individual public notice has become increasingly difficult. Our goal for this type of permit evaluations has been increased to 120 days in recognition of the increasing complexity of the applications we are receiving.

WETLANDS DELINEATION MANUAL

Senator NICKLES. Let me make just a general comment. Senator Johnston said that you are in the process of revising the wetlands manual. That is one of the most ludicrous manuals I have ever seen in my life. It is great for humor, but it is just almost beyond comprehension. I wish I would have brought it. I could have read some interesting sections, and I may do that when you appear before the committee again if it is not revised. It needs to be revised. It needs a little common sense. It is almost embarrassing to see how complicated it is, to think that we are giving this to people out in the field and telling them to examine land and question whether or not that land is wetland. The manual complicates the problem, I would say, instead of solving it. I wish you well.

VEGETATION MODIFICATION AT CORPS LAKES

Let me just touch on a couple of other very quick issues. I have mentioned to you in the past—and I have worked on this issue for some time—the idea of an assessment of fees. The Corps has proposed a significant number of fee increases. A person can have a dock on Corps lakes, and in Oklahoma we have something like 39 reservoirs and lakes in the State. A dock fee right now is $30, but I am reading that you have a proposal that would increase the fees to $400. Plus $75 for 5 years' worth of inspections. That's $475. I see that as a real disincentive for someone to put a dock in.

And then there is the permit for vegetation modification. Do you know what vegetation modification is?

Dr. DICKEY. Mowing.

Senator NICKLES. Mowing grass; yes. [Laughter.]

I complained several years ago about that fee—you ought to see this wetlands manual. It's worse—for vegetation modification, the fees used to be $10 a year for somebody to cut the grass between their home and the water's edge. Now that has been increased to $15, much to my chagrin. This costs more money. If you want to save a little money, eliminate the vegetation modification fee program.

In Oklahoma, to give you an example, whoever is in charge of this program collected $12,800 worth of fees in 1990. We have 1,282 people who paid that fee, but, frankly, we spend a lot more money keeping track of who paid their $15 and who didn't. I complained about it when it was $10. You admitted that you are losing money in the process, so what you did was just raise the fee. Really, all you need to do is work with the lakes area management associations and try and make sure that people are policing the program. Then if somebody doesn't take care of the area, you can do something. But this is just the opposite. You charge them a fee for the privilege of cutting the grass on Corps property between their property and the water's edge. I just find it totally ludicrous.

You can save some money. I am not against you saving money. I want that to be understood. But I also want you to revise these.

These are proposed regulations, if I am correct, now under consideration. I hope that you will consider them long and reduce significantly the dock fees, and I would hope that you would do away with the mowing fees. I think it's just a waste of time and money for the Corps and for the individuals involved. Any comment?

Dr. DICKEY. Senator, let me just say that I do recall your letter as one of the few that we received, frankly, from Members of Congress dealing with this issue. And, as you pointed out, we went out in the Federal Register with our proposal and have received public comment, and we are now considering those comments in preparation of final regulations. And, again, in that process of adopting a final regulation, we will have to respond to those comments that we receive, and we will be doing that. Frankly, I don't know what the resolution will be. But certainly, you have clearly stated your perspective on that.

Let me just say something about the mowing. Another way of looking at it is that it is fish and wildlife habitat destruction. That's the issue from the other side. The controversy is between those who would have a nice lawn going down to the lake versus those who want to see the lakeshore in its natural habitat. That's why we even have a permit issue there.

Senator NICKLES. Dr. Dickey, we need to spend a lot of time, you and I. Have you ever been to Oklahoma?

Dr. DICKEY. Yes, sir.

Senator NICKLES. Have you been to many of the Corps lakes or facilities?

Dr. DICKEY. I have not been to a number of Corps lakes.

Senator NICKLES. Let me give you an example. You have a lot of people who have their second home, maybe their retirement home on the lake. We have a lot of beautiful Corps lakes in our State. People build these homes. They want to retire by the lake; they build the home.

And then, when they have the Corps tell them they can't cut the grass—the old regulation was they could only cut it once a year and then not even with a lawn mower. They had to do it with a tractor. And the idea was not to disturb the natural habitat. So here they build a beautiful home and all they had was weeds, grass, snakes, ticks, et cetera, the 200 feet between their back porch and the water's edge. Totally ridiculous. Greatly devalued not only their property but the beauty of the area.

Senator JOHNSTON. That's a natural habitat for snakes.

Senator NICKLES. Yes; that's exactly right.

The Corps policy makes no sense. We can preserve and protect. I'll give you one example, Lake Eufala in Oklahoma, 660 miles of shore line. We can have plenty of that shore line preserved for natural habitat, for fishing, for wildlife, for public access, but there is no reason in the world not to allow some areas designated to allow people to mow that often without the Federal Government collecting $15 for the privilege.

BROKEN BOW LAKE, OK, TROUT FISHERY

Let me move on to a couple other quick issues. One, I want to thank you for your assistance with the Broken Bow Trout Fishery for a third year. I would like to make that permanent. Do you see that happening? Are there some things that we need to be doing with you? That is a tremendously successful program in southeastern Oklahoma. The Trout Fishery Program is popular with the fishermen, it's popular with that entire region of the State. I have talked to Corps people and they would like for us to be able to continue it. Do you see any problem with making that a permanent fixture?

Dr. DICKEY. I was pleased, Senator, to be able to sign the agreement that provides for those releases through October of this year. To go to a permanent release authority requires a reallocation of storage. It's a more complicated process. Certainly, we are committed to working with the State on that, and I am not aware of any particular problem there. But this is precisely the kind of thing we like to see accomplished with our reservoirs, and, so, philosophically, and so forth, we have no problem with it.

Senator NICKLES. I appreciate that. We really want to make that happen. I have been there, I have been fishing. The people love it. It is a very popular addition.

MONTGOMERY POINT LOCK AND DAM PROJECT

Let me ask one final very quick question. Montgomery Point Lock and Dam. We put some money in to initiate that project. We have actually seen, I think, in our State in that part of the river, 42 days reduced navigation because of lower water flow. Can you tell me where you stand as far as implementing the authorization for the additional lock and dam?

Dr. DICKEY. Senator, that project remains under review within the administration, going through the normal process. It is, I believe, in my Office for review, and, when we're finished, OMB will review it.

One thing that you may not be aware of is that we have determined, based on advice of counsel, that this project is indeed authorized. There was some argument that it needed authorization, but we concluded that, in fact, it does not. A decision with regard to funding the PED is dependent upon the outcome of the internal Army and OMB review. And, as I said, that is underway.

Senator NICKLES. We will work with you. Again, I understand, according to the Tulsa District, that we had an average of 42 days per year last year where navigation restrictions were imposed which caused an economic impact negative of $425,000 each day of restriction. So we have invested, the Government has invested over $1 billion building this navigation water system. We now have a water flow problem. We do need that additional lock and dam to make sure that we're going to have full service on the system. I am afraid that the siltage, et cetera is working against us so we are going to have to move forward. I will work with you on that.

Again, Mr. Chairman, thank you very much. And to my colleagues, Senator Hatfield and Senator Burdick, I apologize for my extended remarks.

Senator JOHNSTON. Senator Burdick?

Senator BURDICK. Thank you, Mr. Chairman.

Good afternoon, General Hatch. Good to see you again.

Dr. Dickey.

STATUS OF MISSOURI RIVER BRIDGE, BISMARCK, ND

As you know, last year's Energy and Water bill required the Corps to begin planning engineering and design of a bridge to be built across the Missouri River south of Bismarck in North Dakota. In addition, the bill directed the Corps to negotiate a local cooperative agreement with a local sponsor. I should add that this LCA will include a new cost-share requirement which was not part of the original authorization back when the bridge was first authorized in 1970.

Could you please tell the committee what the status of this project is and how much money will be needed in fiscal year 1992 to begin construction of the bridge?

Dr. DICKEY. Senator, we are using the funds provided for this project on design. Because we have not completed design, we do not know what the final cost of the project will be. We think it is on the order of some $35 million, but because we haven't completed PED, we don't know what the final cost will be, nor do we know how much we could spend on construction in 1992.

Senator BURDICK. Could you be more definite about a construction date?

Dr. DICKEY. Because we are still in PED, we don't have that, sir.

Senator BURDICK. Will you send it——

Dr. DICKEY. As soon as we develop that, we will provide that to you.

[The information follows:]

FORT YATES BRIDGE, ND

In fiscal year 1992 $2.5 million could be used to continue preconstruction engineering and design. However, this reflects a very ambitious schedule which does not allow for possible requirements of an Environmental Impact Statement or any siting or technical issue resolutions. This schedule could, if no significant issues arise, lead to initiation of construction in 1992.

Senator BURDICK. Thank you very much.

Senator JOHNSTON. Senator Hatfield.

PREPARED QUESTIONS SUBMITTED FOR THE RECORD

Senator HATFIELD [presiding]. Thank you, Mr. Chairman, Dr. Dickey, General Hatch.

Mr. Chairman, I ask unanimous consent that my questions be incorporated in the record. Without objection, so ordered. I am now the chairman. [Laughter.]

[The following questions were not asked at the hearing, but were submitted to the Corps for response subsequent to the hearing:]

ENDANGERED COLUMBIA AND SNAKE RIVER SALMON

Senator HATFIELD. In light of the Energy and Water Development Subcommittee's field hearing last week in Portland on the endangered salmon situation in the Pacific Northwest, I do not intend to spend much time today on that subject. However, I do want to repeat my concerns to you to make sure that Corps Headquarters is fully aware of the situation, and on-board with what General Harrell has told me directly.

In the early-going of the Salmon Summit process, there seemed to be some confusion on the Corps' part regarding its role in finding a solution to the salmon problem. This lack of direction within the Corps resulted in some bad feelings toward the Corps by the Governors in the region, especially Governor Andrus of Idaho. At that point, I felt compelled to make a statement on the Senate floor underscoring some of my same concerns. It is my hope that these misunderstandings are now cleared-up, and the Corps will work with the Pacific Northwest in solving a problem of enormous proportion.

The Salmon Summit's final agreement package contains many measures to help the salmon during the current fiscal year. The Corps' support of the Summit agreement was critical, and I am pleased with the outcome. One critical element of this year's actions is for the Corps to begin the environmental documentation necessary to do a meaningful fiscal year 1992 Snake River reservoir drawdown experiment.

Can you assure me of the Corps' intention to proceed expeditiously with the environmental work this year so that the experiment can occur in fiscal year 1992?

General HATCH. Sir, we are proceeding expeditiously with the NEPA documentation required for a 1992 pool-lowering test. Because regional interests have yet to reach agreement on the scope, duration and experimental design protocol for the experiment, we are planning to carry alternative test scenarios in the draft EIS for public review and comment. The schedule for the scientific and environmental studies is consistent with a 1992 implementation of the test.

Senator HATFIELD. In the Senate Report to the fiscal year 1991 Supplemental Appropriations Bill, the Subcommittee included language directing the Corps and other Federal agencies to cooperate with their regional offices in providing any additional staff or budgetary resources, or make any necessary changes in operations, in order to deal with the salmon situation. Has the Corps determined that any such changes in resources or operations will be necessary in fiscal year 1991?

General HATCH. Sir, the measures that we are taking to modify flows and pool levels, and the analysis of the many proposed measures for 1992 do require resources and operations that were not contemplated by the Administration or the Congress. These changes are, however, within the fiscal and operational flexibility available to the Corps.

Senator HATFIELD. In addition, the Supplemental Appropriations language directed the Federal agencies to report to Congress within 30 days on the steps that will be taken during fiscal year 1991 to deal with the potential Endangered Species Act listing. Have you completed your report on this matter, and when will we see it?

General HATCH. The Secretary of the Army's report is essentially complete and is being reviewed within the Administration. We have had an objective of meeting the 30 day submission requirement and I am hopeful that the report will be delivered to the Committee in the very near future.

COLUMBIA AND SNAKE RIVER FISH BYPASS FACILITIES

Senator HATFIELD. I am very pleased that the Corps has requested $31.7 million in its fiscal year 1992 budget for fish bypass systems on the Columbia and Snake River projects. In light of the potential Endangered Species Act listing of the salmon, this funding is critical. Could you please provide for the Subcommittee a precise description on what work will be accomplished with these funds? Also, could you please provide a funding profile of the work accomplished so far on the fish bypass facilities, and how much more work remains to be done?

General HATCH. Sir, I am happy to report that this important work is moving along on schedule. Through March 1991 we have expended about $34 million of the $250 million total estimated cost, with most of major construction activities scheduled to begin in an orderly sequence in fiscal year 1992 and the outyears. In fiscal year 1992 we will be well into construction of new screened bypass facilities at Lower Monumental and Ice Harbor, utilizing about $15 million of our $31.7 million budget. Another $5 million will be used for construction of juvenile fish holding and loading facility improvements at McNary Dam. The remainder of the fiscal year 1992 budget will be used for extensive engineering and design and extended screen prototype testing for Lower Granite, McNary, Little Goose, and The Dalles. Significant completed work includes the two new fish transportation barges and a major new juvenile fish holding and loading facility at Little Goose. Finally, and most important from our point of view, we will continue in cooperation with the region to determine what mitigation remains to be achieved for Corps dams on the mainstem Columbia and Lower Snake Rivers.

The following three tables provide the funding profile for the Columbia River Juvenile Fish Mitigation Program. Table 1 identifies the work to be accomplished in fiscal year 1992 with the $31,700,000 that is in the President's budget. Table 2 is the work that has been accomplished from fiscal year 1989 through March 1991. The 3rd table is the work that is scheduled to be accomplished from April 1991 through fiscal year 1998. Table 3 includes the figures that are on Table 1. The total project estimate can be calculated by using Tables 2 and 3 which add to $250,000,000.

TABLE 1.—*Work to be accomplished in fiscal year 1992*

	Amount
Lower Granite: Initiate extended screen prototype testing and continue engineering and design	$3,110,000
Lower Monumental: Complete screened bypass and initiate holding and loading improvements	8,900,000
McNary: Initiate holding and loading improvements and continue extended screen prototype testing and design	8,800,000
Complete mitigation analysis	1,790,000
Little Goose: Continue extended screen design	800,000
Ice Harbor: Continue construction of screened bypass	5,300,000
The Dalles: Continue design and development of extended screen bypass	3,000,000
Total	31,700,000

TABLE 2.—*Work accomplished from fiscal year 1989 to March 1991*

	Amount
Lower Granite: Two fish barges, juvenile fish support facilities, fixed deflectors, engineering and design, and construction management	$7,624,000
Lower Monumental: Initiated submerged traveling screens, initiated collection/bypass facilities, and engineering and design	6,500,000
McNary: Prototype extended screens and engineering and design	5,033,000
Mitigation analysis: Initiated study	210,000
Little Goose: Collection bypass facilities, engineering and design, and construction management	11,825,000
Ice Harbor: Engineering and design	736,000
The Dalles: Engineering and design	2,110,000
Total	34,038,000

TABLE 3.—*Work to be accomplished from April 1991 through fiscal year 1998*

	Amount
Lower Granite: Extended screens, gantry crane, and continue engineering and design	$16,876,000
Lower Monumental: Holding and loading facilities, gantry crane, and continue engineering and design	28,900,000
McNary: Complete holding and loading facilities. screens, maintenance facility, and continue engineering and design	51,067,000
Complete mitigation analysis	1,790,000
Little Goose: Extended screens, gantry crane, and continue engineering and design	14,575,000
Ice Harbor: Fish collection facilities, raised intake gates, gantry crane, complete screens, and continue engineering and design	19,264,000
The Dalles: Bypass system, screens, crane and maintenance facility, and continue engineering and design	83,490,000
Total	215,962,000

MINIMUM DREDGE FLEET

Senator HATFIELD. In completing its study on the minimum dredge fleet, is the Corps considering the impact on the navigational channels and ports in the Columbia River in the event that the salmon become listed as an endangered species?

General HATCH. The Corps minimum fleet dredges are used almost exclusively in tidal areas which will not be significantly impacted in the event that the salmon is declared an endangered species and Columbia and Snake reservoirs are drawn down annually.

Senator HATFIELD. I received a letter from Colonel Perkins, Assistant Director of Civil Works, Pacific Region, in early March describing the Corps' progress on the minimum dredge fleet study. In that letter, Colonel Perkins indicated that a copy of the draft study would be available to me in early 1991. Since we are now well into the month of May, when will be draft be available?

General HATCH. The first draft of the study has been completed and is being reviewed at Headquarters. We expect to complete this review in early June and we will provide you and other interested parties with copies for comment at that time.

COLUMBIA RIVER CHANNEL DEEPENING PROJECT

Senator HATFIELD. What is the status of the reconnaissance study for the Columbia River channel deepening project? What is being done to expedite the Corps' review process for the study?

General HATCH. The Reconnaissance Report is scheduled for completion at the end of June 1991. A reconnaissance review conference is planned to follow in July. Currently, the Corps is developing a Feasibility Cost Sharing Agreement and Initial Project Management Plan jointly with the local sponsor.

Senator HATFIELD. What is the status of negotiation with local sponsors for cost-sharing for the feasibility study? Have you been able to formulate a project that local sponsors can afford?

General HATCH. The process of working out the scope of the feasibility study with the local sponsor is ongoing at this time. We are aware of what the sponsor can afford. We are endeavoring to balance their financial capability with the need to produce a defensible feasibility report.

ELK CREEK DAM

Senator HATFIELD. It is my understanding that the Corps has just completed its Final Environmental Impact Statement Supplemental (FEISS) on Elk Creek Dam. Does the FEISS improve fish survivability at the project? If so, how?

General HATCH. Sir, the FEISS examined five alternatives/options for the partially completed Elk Creek project. The authorized full pool and minimum pool options would eliminate fish runs at the dam site. The other three alternatives (no pool, abandonment, and removal) could allow fish to continue migrating past the dam's location.

Senator HATFIELD. During the public comment period on the draft Environmental Impact Statement Supplemental (EISS), what kind of input did you receive regarding the impact of the revised project on wild fish runs? How did you respond to these comments? What is the Corps' view of the impact of the completed project on wild fish runs in the Rouge Basin?

General HATCH. Sir, we received substantial input, including that of the Governor of Oregon, expressing concern for the survivability of wild stocks in the Elk Creek basin if the project is to be completed. Our response explained the original fish mitigation plan involving hatchery replacement of lost fish, and the interim passage that the no pool alternative could provide. We too are concerned for the survivability of wild stocks. We have considered those impacts in our preference for the no pool alternative if the project is to be completed. We will continue to evaluate fish passage potential and outlet design to minimize those impacts.

Senator HATFIELD. Please explain the rationale behind the preferred alternative in the FEISS (the no reservoir option). Is this alternative more or less costly than filling the reservoir? Is your recommendation not to fill the reservoir based on environmental concerns or other issues?

General HATCH. Sir, we prefer the no pool alternative because the demand for conservation storage has not developed and we consider it prudent to operate the project without a pool to minimize adverse impacts on fish and wildlife. Since the project was authorized in 1962, the need to preserve naturally reproducing populations of anadromous fish has become increasingly important. Construction and operation of the project without a conservation pool provides the opportunity to provide fish passage and preserve spawning areas. The no pool alternative will impose additional costs to redesign and rework the outlet for dry reservoir operation. However, the dry pool alternative will defer costs for recreation, clearing and wildlife mitigation. So on balance, omitting deferred costs, the first cost of the no pool option is estimated about $5 million less than the full pool alternative.

Senator HATFIELD. Did the Corps discover any environmental issues or problems during the development of the FEISS that would preclude the completion of the project?

General HATCH. No, sir. No significant cumulative environmental impacts were discovered for any alternative during the preparation of the FEIS. However, the no pool alternative defers a major portion of the impacts identified in the FEISS.

Senator HATFIELD. Are there any fisheries-related concerns put forth by the Oregon Department of Fish and Wildlife or any other agency that you were not able to address in the FEISS?

General HATCH. All fisheries-related comments/concerns have been addressed in the FEISS, either by revision of text or as written response to specific comments. Should the decision be made to complete the project with no pool operation, further consultation with resource agencies will be required to evaluate fish passage potential and to design a lower level outlet to accommodate fish passage.

Senator HATFIELD. How many comments did the Corps receive on the draft EISS? How many of these comments recommended completing the project? How many recommended the full pool option?

General HATCH. Sir, a total of 755 letters were received during the 45-day public and agency review period on the Draft EISS. The majority of these letters (740) stated a preference for one of the alternatives described in the document, without providing more detailed comments on the content of the Draft EISS. A total of 730 recommended completing the project of which 719 preferred the full pool operating alternative.

BONNEVILLE LOCK

Senator HATFIELD. Could you please provide the Subcommittee with a progress report on the construction of the Bonneville Lock Project? Please include in that report an estimate of the costs to complete the project, and your estimated completion schedule.

General HATCH. Sir, the construction of the Main Lock construction contract is approximately 38 percent complete. This contract will construct the lock chamber, excavate both upstream and downstream approach channels, relocate the project roads, and remove some of the existing features of the old lock necessary for the operation of the new lock.

The total estimated cost for the Navigation Lock Project is $329 million. We are forecasting no increases in this amount except for inflation. The cost through fiscal year 1990 was $156 million. Our expenditures so far this year amount to $39 million.

The schedule for completion of the lock is very tight because of delays associated with the inclement weather during this past winter.

Construction of the upstream guardwall is ongoing and is scheduled for completion in June 1991. The main lock contract was awarded in February 1991 with completion scheduled for May 1993. Total project completion is scheduled for September 1993.

FTE LEVELS—IMPACT ON MAINTENANCE

Senator HATFIELD. I would like the Corps to comment on a situation that has just been brought to my attention concerning the impact of your personnel levels on the maintenance of Corps' hydroelectric facilities. As it has been presented to me, the "Full Time Equivalent" staffing levels at the Corps results in the need to contract out some of your maintenance projects to private companies. While I usually am supportive of efforts to contract out work to save federal dollars, I am told that in this case the effect is just the opposite. The Corps is contracting out work and paying more than if the Corps did the work itself.

For example, at John Day Dam, Corps employees have repaired seven turbines for an average cost of $409,000 per turbine—with none of the seven repaired exceeding $480,000. These cost figures are supposed to reflect all materials, labor, fringe benefits, and overhead. On the other hand, the Corps contracted out the repair of identical turbines at Lower Monumental Dam unit #1, and the cost of this contract was $820,438.

Would you please explain to me why the Lower Monumental Dam repair was $411,000 more than the average unit cost at John Day.

Who sets your FTE levels? You or OMB?

General HATCH. The Lower Monumental Dam unit #1 turbine repair cost $411,000 more than the average unit cost at John Day primarily because of the benefits of economies of scale. At Lower Monumental only a single unit was repaired, while at John Day 8 units were involved. It is normal practice for the Corps to contract out major nonroutine, nonrepetitive work because it is simply not economical to maintain a sufficient inhouse workforce to meet unscheduled contingencies. The John Day powerhouse is almost three times larger than the Lower Monumental powerhouse. Because it has a larger inhouse work force and because the work was done over a period of 6 years, it was possible for John Day to do the work in question with the inhouse workforce supplemented, as required, by temporary employees. With its proportionally smaller work force, Lower Monumental does not have the capacity to do the work even if temporary employees were hired to supplement the permanent staff.

The Office of Management and Budget provides the Corps with an overall FTE ceiling as part of our total budget. As with the budget, we present our requirements to OMB based on our workload. I believe that our allocation is adequate to execute the work authorized by Congress. I distribute individual FTE ceilings to division commanders in proportion to their respect workloads and they, in turn, allocate manpower to their districts. Generally speaking, we believe it to be inefficient to maintain sufficient manpower to perform all operations and maintenance work with inhouse forces. Periodic, nonrepetitive work is often contracted. In fiscal year 1990, the North Pacific Division performed 77 percent of its total operations and maintenance work and 79 percent of its total hydropower work with Corps employees. It contracted only 9 percent of its operations and maintenance work and 6 percent of its hydropower work. (The remainder of the work was performed by other Corps divisions or laboratories, or by other Federal agencies.) By maintaining a healthy balance between work performed by Corps employees and contracted work we avoid having skilled Federal employees without enough to do between major maintenance or repair tasks and, over the long term, make the most efficient use of Federal dollars.

WILLAMETTE VALLEY PROJECT REVIEW

Senator **HATFIELD**. Please provide the Subcommittee with a status report on the Willamette Valley Project Review that was requested by Congressman Peter DeFazio.

General **HATCH**. A reconnaissance report is scheduled to be completed this June. Cost shared feasibility studies are scheduled to be initiated with fiscal year 1992 funds.

CORPS REORGANIZATION PLAN

Senator **HATFIELD**. Like many of my Senate and House colleagues, I am interested in the Corps' reorganization plan. With Portland being the headquarters for both the Portland District and the North Pacific Division, there is tremendous interest in this issue in my home state.

I assume that the Corps has been under a high degree of political pressure on this matter over the last several months, and that it was probably that very pressure which prevented Secretary Cheney from revealing the reorganization plan a few weeks ago when he announced the Base Closure list. Even though Portland has a great deal of stake in the reorganization, I did not feel that it was appropriate for me to weigh-in with anyone at the Corps prior to the reorganization announcement.

The reasoning behind the need to reorganize the Corps is that of operational efficiency. The Corps knows its own operations better than anyone else, and should have the opportunity to give this effort its best shot, without interference, and any recommendations that are made should be able to stand the test of close scrutiny.

With that said, I want to put the Corps on notice that I intend to scrutinize any final reorganization plan in great detail especially as it impacts on current Portland operations. If I perceive any unfairness and inequity in the plan, you can bet you will hear from me.

In addition, I want to tell you right now that when the reorganization plan is finally revealed, I will ask the Corps also to provide me with the details of the initial reorganization plan that was almost announced by Secretary Cheney when the Base Closure list was announced. Any changes between that first plan and a second one will be highly suspect to me.

Will there be any problem in providing me with any of this information?

General **HATCH**. I will be happy to provide you with any information you request about the Corps reorganization plan once we have made the plan public. I note, however, that there have been no changes to the Corps reorganization plan which the Department of the Army submitted to Secretary Cheney prior to his April 12, 1991, press conference.

SECTION 1135 PROGRAM

Senator **HATFIELD**. What is the current Corps policy regarding project selection for the Section 1135 program?

General **WILLIAMS**. The criteria used to select the projects include the statutory requirements that the projects must be for modification of a constructed project consistent with the authorized project purpose(s) and for the improvement of the environment. The emphasis is on the restoration of habitat that could be expected to sustain modern historic fish and wildlife resources. There must be a clear connection between the location of the proposed modification and the original project with minimal acquisition of additional lands. The modification must have tangible and intangible benefits judged to exceed the tangible and intangible costs and there must be a non-Federal sponsor willing to provide 25 percent of the implementation cost and 100 percent of the incremental operation, maintenance, repair and replacement cost. Because of the limited program resources we have initially set a federal limit of $2 million per project modification.

Senator HATFIELD. Does the Corps take into consideration multiple use objectives?

General WILLIAMS. If proposed project modifications are consistent with the authorized project purposes and clearly have restoration of habitat that could be expected to sustain modern historic fish and wildlife resources as the primary objective, then additional multiple use benefits will be considered positively in selecting potential Section 1135 projects.

Senator HATFIELD. Would an existing Corps project in an urban area that has since been shown to have altered the hydrology of the area, threatened endangered and rare plants and caused the loss of wetlands be a strong candidate for this program if alterations could be made that would maintain flood control, and improve water quality, create new, and enhance existing wetlands, protect endangered species and provide for new recreational activities and research opportunities.

General WILLIAMS. Each proposed Section 1135 project is considered on its merits and it is difficult to predict the decision that would be made based on a hypothetical example. However, if in the situation described all of the selection criteria mentioned above were met and there were no adverse consequences of the modification it would appear to be a candidate for the program.

BUDGET REQUEST FOR PACIFIC OCEAN DIVISION

Senator HATFIELD. First of all, I would like to talk about the Pacific Ocean Division with particular emphasis on Oregon and say, Dr. Dickey, General Hatch, that this budget, in my many years in the Senate, is one of the most comprehensive I have seen presented by the Corps. And I want you to know, as in my opening statement, I take note of the fact that even the $8.7 million for rehabilitation of the first powerhouse at Bonneville is certainly an initiative that indicates long-range planning and will not require us to go through the amendment process here in this committee. There are many other examples of the comprehensiveness of this budget to which I want to make special note.

M'KENZIE RIVER TEMPERATURE CONTROL MEASURES

I want to also, if I could for just a moment, go to the McKenzie River temperature control measures and then to the Columbia. On April 10, I wrote General Hatch regarding responsibility for temperature control measures in connection with the Corps' Cougar and Blue River projects. Dr. Dickey responded I believe very shortly thereafter on April 25, and in that letter stated the Corps' conclusion that the cost sharing is not appropriate in connection with a planned study of the feasibility of temperature control measures.

Now, I appreciate your view on that. I would like to delineate at this point to get a clarification in my own mind between the role of the local and the Federal groups in relation to not only the feasibility study but the actual installation or implementation of what might be a result of that study. Could you distinguish and delineate those responsibilities as to the cost sharing?

Dr. DICKEY. I would be happy to.

Senator HATFIELD. These two projects; I don't want general projects.

Dr. DICKEY. Yes; these two projects are being addressed in the feasibility study that is underway, so, we must recognize that whatever I have to say is preliminary. But, certainly, the question of the applicable cost sharing if, indeed, temperature control is found to be a Federal responsibility—is covered in section 906 of the Water Resources Development Act of 1986, subsections (b) and (e).

The purpose of my letter was to state that notwithstanding those authorities, the administration has adopted, as a budgetary policy for environmental restoration projects, a 25-percent non-Federal cost-sharing requirement. So, if the administration were to include these in the President's budget as initiatives, we would expect, under this policy, a 25-percent cost sharing.

Senator HATFIELD. Just to reiterate for the record, as you know, Dr. Dickey, I represented the Senate on the matter of developing the cost sharing that ultimately became Public Law 99–662, and I have supported cost sharing. In fact, I was the only western Senator that did support cost sharing. And we felt we had worked out a very equitable plan. It satisfied the Reagan administration, it satisfied most of the Members of Congress, if not the westerners.

And so it disturbs me a little bit that we have now, in effect, amended the cost-sharing policy established under Public Law 99–662 by a budgetary process, or a budgetary regulation, by adding the 25 percent. Have I stated the proposition as I understand it, that you are not basing your cost-sharing requirement on law that we established for the cost-sharing principle, but you are now suggesting that these projects, such as the two that I have raised on the McKenzie, require a 25-percent local cost sharing on a matter of budgetary policy? Is this correct?

Dr. DICKEY. That's correct, Senator; that is right.

Senator HATFIELD. I will not address this further now, but it will be revisited at the proper time, I can assure you.

ECONOMIC IMPACT OF ENDANGERED SPECIES ACT IN THE PACIFIC NORTHWEST

General Hatch and Dr. Dickey, as you are aware, we are facing some very serious issues under the Endangered Species Act in the Pacific Northwest, and only want to put my questions into context as far as the record is concerned. We have a situation that has developed with the northern spotted owl that, in effect, may result in little or no Federal timber being harvested on the national forests in Oregon and Washington during fiscal year 1991, the current fiscal year. That, in and of itself, represents a very serious economic impact.

And, again for the record, there is a proposed listing now, under the Endangered Species Act, of the Snake River sockeye salmon. Within a few days or perhaps a week from now, we expect to have as many as four more salmon species proposed for listing in the Columbia River basin. We are told that there are as many as 126 more petitions for 126 more species of salmon that ultimately could be filed by advocacy groups. Obviously, this has some very, very serious potential impacts

Sixty-two percent of the energy of the Northwest is produced by the Bonneville Power Administration which generates electricity from the flow of the river, head watered in Canada, coming down through the great systems of the Snake and the Columbia. Any kind of adjustment to the flow of the river that relates to a recovery plan for any one species of salmon will obviously have an impact on the ability to generate power under current rates or under current levels of megawatts.

We, in the meantime, obviously as you know, have built an intertie with southern California, so we are wheeling surplus power to southern California and getting coal-fired generated power out of southern California in return to raise the power level of the production of the Bonneville system. We are producing, as you know, 12,500 firm load megawatts on the average, systemwide.

SALMON SUMMIT

We have about $12 to $14 billion of commerce that flows through the Port of Portland and the other Columbia River ports. We export 85 percent of our wheat production. We are the largest dry cargo port on the entire west coast, which certainly impacts upon our balance of trade. I could go on and on with the recreation and the fisheries and all the other things and the irrigators and the agriculturalists, relating to the importance of that river.

Because of this experience with the Endangered Species Act vis a vis the owl, I convened what has come to be known as the salmon summit of the Pacific Northwest, in which the Corps, Bureau of Reclamation, Bureau of Land Management, Forest Service, National Marine Fisheries Service, all the Federal agencies, have participated along with the State's of Oregon, Washington, Idaho, and Montana under the full participation and support of the Governors of those four States. And we called together groups—environmentalists, user groups, and so forth and so on—to try to come up with a regional plan for recovery, not to sidetrack the endangered species process which is on track and will continue on track, but to try to develop a plan that we could live with.

Now, I am getting down to two points. First of all, for the past few years, I have been adding, as you know, to this appropriation measure of yours certain moneys to build the screens and bypass facilities at the dams to try to mitigate the loss of the salmon, particularly the downstream migration of the juveniles. So I want to commend you, first of all, for incorporating in this budget moneys for building and escalating the construction of those screens and bypasses.

DREDGING COSTS AND FLOW TARGETS FOR COLUMBIA RIVER UNDER RESERVOIR DRAWDOWN PLAN

But the second point I want to get to as far as asking you to respond has to do with the possibility under the Governors' report made last week to me in Portland in a series of my hearings that calls for a drawdown on the reservoir.

Now, having just come back from the eastern part of my State in the upper Columbia areas last week, General Hatch, I was approached, of course, by agricultural, shipping, navigation, and irrigation interests, who wanted to know that, if we went ahead with this Governors' report and had a reservoir drawdown, what would be the cost estimate the Corps would make on dredging and access to ports as well as dredging when you get down to a minimum stream level or minimum level of the reservoirs. Do you have that underway? And if you have, what is the timeframe in which you think we might be able to review that additional cost?

General HATCH. Sir, we hope to be able to do that review in about 30 days.

Senator HATFIELD. So that, in other words, it would be within the timeframe in which we are working on this appropriation for fiscal year 1992.

General HATCH. Yes, sir; yes, sir.

Senator HATFIELD. One other area that we did not address and yet is very important is the lower Columbia River flow target. Again, I understand that you could possibly produce some flow targets for downstream perhaps within a brief period of time?

General HATCH. Sir, I misspoke a few moments ago. The 30 days is in response to that question.

Senator HATFIELD. For this one.

General HATCH. Yes, sir.

Senator HATFIELD. All right. Now tell me about the dredging cost projections for the upper river.

General HATCH. As you know, the Corps maintains the river navigation channel under its existing authorities. The maintenance of port access and berthing areas is the responsibility of port owners. The Corps doesn't have authority to dredge those latter areas. If we were directed to carry that out, our rough estimate would be about $8.2 million for all six pools.

Senator HATFIELD. About $48 million total for the six pools to maintain access and navigation capability?

General HATCH. $8.2 million.

Senator HATFIELD. That is $8.2 million times six?

General HATCH. No, sir; for the total. For all six pools the total would be $8.2 million.

Senator HATFIELD. All six pools. And what about the capability in terms of the fleet?

General HATCH. Sir, we would have the fleet capability. We would have it, or contract for it; yes, sir.

Senator HATFIELD. You would have that capability.

Mr. Chairman, I have already put my questions in the record, so I now defer to you, Mr. Chairman. I am happy to see you here today.

Chairman BYRD [presiding]. Thank you very much, Senator Hatfield. I support your request as well, although I was not here to hear it. But I know it's all right.

LEVISA AND TUG FORKS PROJECT—WEST VIRGINIA ELEMENTS

General Hatch, I enjoyed talking with you earlier on. It is my understanding that the Corps has a fiscal year 1992 capability to obligate an additional $21.5 million above the $5,010,000 which is requested for the West Virginia portions of the Tug Fork section 202 project. How would those additional funds be used?

General HATCH. Sir, $4.5 million of that would be to advance completion of Matewan by about 6 months. The balance of $17 million would be for the lower Mingo County, WV. element.

Chairman BYRD. Would funding the full capability of $21.5 million for these projects save money or cost more money in the long run?

General **HATCH**. If expenditure of funds only is considered, without regard for the cost of money, if you will, accelerating the projects would save money.

Chairman **BYRD**. Would the project be completed earlier?

General **HATCH**. For the Matewan project, sir, we estimate it would be completed about 6 months earlier.

Chairman **BYRD**. If an additional $17 million were available for the lower Mingo County project in fiscal year 1992, in addition to accelerating flood protection for the area, would the additional money potentially permit the Corps of Engineers to contract the floodproofing and relocation work more efficiently and thereby save money?

General **HATCH**. Yes, sir; for the same reason. We would be able to achieve some economies of scale and probably, in the long run, save money.

Chairman **BYRD**. What is the Corps' schedule to complete flood protection studies for upper Mingo County and for the upper Tug Fork and its tributaries?

General **HATCH**. Sir, for upper Mingo County, if funds were provided in fiscal years 1992 and 1993, a special project report could be completed in May 1993. At this time, we do not have specific project reports scheduled for the remaining elements.

Chairman **BYRD**. Congress passed my amendment to authorize this Tug Fork project more than 10 years ago in section 202 of Public Law 96–367, the fiscal year 1981 Energy and Water Development appropriation bill, and the Corps still plans to be studying many of these areas now some 17 or more years later. I am not talking about actual construction, floodproofing of homes and relocation; these are just the studies that are taking so long. The actual flood protection measures would apparently take even longer.

Now, why should the people in these communities have to wait so long for flood protection? What can you do to accelerate the process for these remaining areas? What would your fiscal year 1992 resource requirements be for a specific project report for McDowell County, say, for example? How much would you need for the upper Mingo County area, for the upper Tug Fork, for Wayne County, for Hatfield Bottom, and for the Tug Fork tributaries?

General **HATCH**. Yes, sir; I have specific figures for each one of those that I will provide, if I may, for the record. As you may recall, one of our difficulties in moving forward with those projects as quickly as you might have expected under normal circumstances, is that we had no preexisting studies and we began the projects, if you will, from scratch.

We have instituted project management processes and procedures and have developed mechanisms for providing continuous funding so that there are no breaks through completion of those projects. They are receiving considerable command attention from the district through to my level. The priority given them is carefully managed so that the most sensitive projects are worked first. The district commanders of Baltimore and Huntington, and particularly the latter, understand fully the priority of projects. I believe we are moving them as quickly as possible, consistent with providing quality specific project reports, designs, and bid packages.

Chairman BYRD. Then you will provide for the record the responses to my questions concerning the individual projects.

General HATCH. I will, sir.

[The information follows:]

The fiscal year 1992 capability for the West Virginia Specific Project Reports of the Levisa and Tug Forks of the Big Sandy River and Upper Cumberland River in West Virginia, Virginia and Kentucky are as follows:

Specific project reports	*Capability*
McDowell County, WV	$150,000
Upper Mingo County, WV	370,000
Wayne County, WV	150,000
Tug Fork tributaries, West Virginia	200,000
Upper Tug Fork, WV	150,000
Hatfield Bottom area, Matewan, WV	([1])

[1] No additional funds required. Funds to complete the final Specific Project Report are available from the ongoing Matewan, West Virginia element.

CONCERN OVER ADMINISTRATION DISREGARD FOR COMMITTEE REPORT LANGUAGE

Chairman BYRD. I am concerned that the administration has a disregard for directives contained in the committee's report language. For example, in 1989, the chairman of the subcommittee, Senator Johnston, kindly included my report language allocating $2 million to initiate nonstructural flood protection measures in Mingo County. The administration did not use that money for its intended purpose. Subsequently, I had to request that bill language be included in the Energy and Water bill to ensure that the lower Mingo County work would be undertaken as indicated.

Now, we can write the entire committee report into bill language, but that would limit your flexibility probably and be harmful to the Corps' long-term interest. Can't you prevail on the Assistant Secretary's Office and the OMB that report language is the most suitable and efficient way to deal with congressional intent?

General HATCH. Sir, from time to time we prevail to no avail. But, I would like to turn that one over to Dr. Dickey, sir, since he is present in the room.

Chairman BYRD. Dr. Dickey?

Dr. DICKEY. Senator, I would say that, certainly, the Corps makes an eloquent argument in each case. And both the Office of the Assistant Secretary and the Office of Management and Budget review each case with great consideration. And, in the case that you cite here, we have not been able to go along with the report language, however, we reconsider that each year. We are certainly aware of your strong interest and support for this project and will note that.

Chairman BYRD. Well, that isn't a very good reply to the question. The report language does not represent just my interest. The report language represents the Senate's interest and it is intended to be helpful to the administration. Certainly, the committee always wants to cooperate with the administration, but if the administration doesn't want this kind of cooperation and flexibility, we can put it into the bill. And there will be no mistake about what the language means if it is in the bill. And we have had to do it before and we can do it again.

So, I would like to take this opportunity to put the administration on notice and our committee members as well that, as chairman of the full committee, I will not sit idly by while the report language of this committee is ignored by bureaucrats downtown. And they are fine people. We have to have them, just like we have to have politicians. So the title or the term "bureaucrat" is not a pejorative one, nor is the term "politician," necessarily.

But I don't believe there is any need for me to elaborate any further on this point except to say that we don't take it lightly. The Senate happened to be created before the executive branch was created and before the judiciary. And Senators sometimes stay around a long time. Occasionally, they are around a long time and their memories are usually pretty long.

CHARLESTON RIVERFRONT PARK PROJECT, WEST VIRGINIA

On the Charleston Riverfront Park, it is my understanding that the budget contains no additional funding for the park. Is that correct?

General HATCH. That is correct, sir.

Chairman BYRD. Has the Corps completed a local cost-sharing agreement with the city of Charleston and has the design work proceeded on schedule?

Dr. DICKEY. The agreement, sir, has not been consummated but I believe the design is on schedule.

Chairman BYRD. How would the Corps initiate construction of the Charleston riverfront this fall if there is no money in the budget?

General HATCH. Sir, we would not be able to unless funds were provided. If they were, we could award a construction contract in December 1991.

Chairman BYRD. If the Corps has entered into an agreement to cost share the project with the city of Charleston, don't you feel that the Government has an obligation to request the necessary funds and to proceed with the riverfront park construction on schedule?

Dr. DICKEY. The language of the agreement, yet to be consummated, will reflect the commitment—the terms under which the project would proceed. And, so, it is a question of what the exact wording of that agreement would be.

Chairman BYRD. How much is required in fiscal year 1992 to keep the project on schedule?

Dr. DICKEY. Two million dollars.

Chairman BYRD. When would construction be completed?

Dr. DICKEY. In 1994.

General HATCH. March 1994, sir.

Chairman BYRD. When would the project be structurally completed?

General HATCH. Sir, all major construction is scheduled to be completed by September 1993. Only minor work, such as seeding, planting, and cleanup will remain to be done.

ADDITIONAL QUESTIONS SUBMITTED FOR THE RECORD

Chairman BYRD. I will have other questions for the record, General Hatch. Other members may likewise have, and they will be submitted to you. And the committee would appreciate your prompt and thorough response to each of the questions.

[The following questions were not asked at the hearing, but were submitted to the Corps for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR BYRD

MOOREFIELD AND PETERSBURG, WV

Senator BYRD. Moving on to another subject, the fiscal year 1992 budget contains a request of $950,000 for Moorefield and $550,000 for Petersburg. What is the full fiscal year 1992 funding capability for each of these projects?

General HATCH. These funding requests represent the full amount that can be efficiently utilized in the coming year.

Senator BYRD. General Hatch, these are not huge projects at Petersburg and Moorefield. Their total estimated costs are in the $20 million range. The Corps of Engineers has been studying these sites actively since the floods in November 1985; and yet I am told that construction of flood protection measures at Petersburg will probably not be completed until 1997, and similarly not until 1998 at Moorefield. It is my impression that the Corps has been provided with all the money it needs to complete these projects as quickly as possible, is that not correct?

General HATCH. That is correct. All funds needed by the Baltimore District have been allotted for work on these two projects.

Senator BYRD. Then why does it take twelve or more years to construct relatively small scale flood protection measures such as Moorefield and Petersburg?

General HATCH. The reconnaissance study for these projects was completed in fiscal year 1987, with feasibility reports following two years later, in time for project authorizations to be included in the Water Resources Development Act of 1990. Design is being accomplished as quickly as possible, consistent with good practice, and the projects should be ready for construction within 4 to 5 years of the start of design. We are presently reviewing what can be done to shorten the preconstruction engineering and design period, ideally to three years for projects of this size. The period of time you mention is, I agree, lengthier than desirable, and we in the Corps of Engineers are working to shorten the time from project inception to construction.

Senator BYRD. May I have your assurances that you will do everything possible to accelerate these two projects?

General HATCH. Yes, sir. You have my assurances that we will promptly pursue each step of the process.

STONEWALL JACKSON LAKE, WV

Senator BYRD. On a different subject, I visited Stonewall Jackson Lake last week. If the $40 million in flood damages which that dam has prevented since 1985 are any indications, I believe that it is fair to say that the dam has probably been a life-saver. You and I have worked very hard to make Stonewall Jackson Dam a reality, and I thank you for the Corp's efforts there to date.

There is one major element of unfinished business at Stonewall Jackson Lake, however, and I am referring to the recreation facilities there.

In 1977 the State entered into a cost-sharing agreement with the Corps to develop certain recreational facilities at Stonewall such as boat launch ramps, camp grounds and the like. I am told that the Corps has spent approximately $30 million on these facilities to date and reluctantly has been asked by the Governor to stop further work under the original recreation plan because the State is financially unable to fulfill its fifty percent cost-sharing responsibilities for the work to date.

General Hatch, do you concur in the Governor's view that the completion of the remaining campsites and utilities would not generate adequate revenue to help the State repay its debt to the government?

General HATCH. Yes Sir.

Senator BYRD. Have you been able to reach an agreement where-by repayment of the State's debt could be postponed until the State is in better financial condition?

General HATCH. No Sir. We have not discussed the matter of postponing the repayment of the State's debt until the State is in better financial condition, because the State requested that it be allowed to credit the cost of building certain recreational facilities (lodge, cabins, and golf course) towards its share of the overall recreation cost. The State also asked that its request be forwarded for a decision by the Assistant Secretary of the Army (Civil Works). The State was informed by letter dated May 8, 1991, that cost sharing for lodge, cabins, and golf course could not be cost shared under current policy.

Senator BYRD. I hope, General Hatch, that the Corps will extend every effort, and be as flexible as the law permits, in resolving this cost-sharing problem with the State. Will you do that?

General HATCH. Yes Sir. We intend to extend every effort within the law to the State of West Virginia to resolve this cost sharing issue.

Senator BYRD. Thank you for your responses today, General Hatch.

WILLIAMSON AREA, WEST VIRGINIA

Senator BYRD. Have the accelerated Congressional funding for the West Williamson floodwall, and reprogramming by the Corps, allowed the Corps to complete this project, and therefore provide flood protection, for the town of Williamson sooner than originally scheduled?

General HATCH. The West Williamson floodwall was dedicated in August 1989 This work was completed sixteen months and two flood seasons ahead of schedule. Construction of the Central Business District floodwall, gate closures, interior drainage system, and two pump stations is scheduled for completion in November 1992. However, the City of Williamson achieved the 1977 flood level protection on 25 April 1991. Although, no milestone for this event was scheduled, the 1977 flood protection was achieved much sooner than anticipated.

QUESTIONS SUBMITTED BY SENATOR DOMENICI

COCHITI DAM SEEPAGE SETTLEMENT, NEW MEXICO

Question. In Public Law 100–202, the Congress directed the Corps of Engineers to negotiate with Cochiti Pueblo to find a solution to a seepage problem occurring because of the existence of Cochiti Dam. This seepage has water-logged virtually all of the Pueblo's land that is suitable for growing crops, thereby making these lands unusable for farming and associated religious activities.

To accomplish this task, $750,000 was appropriated.

To the credit of your fine staff in New Mexico, the Corps and Pueblo worked effectively, in cooperation with other agencies such as the Bureau of Reclamation and the Bureau of Indian Affairs. The result is a plan that I understand should soon be sent to Congress.

The plan calls for installation of a drain-field system to restore the Pueblo's lands; creation of a "sinking fund" to cover future operations, maintenance and replacement; and a payment to the Pueblo for past damages to these important lands. The total cost would be $11,938,000—far less than the Government's exposure in court. In return, the Pueblo will drop its pending lawsuit.

It is my understanding that two things must occur to meet the Government's clear responsibility to the Cochiti Pueblo. First, another $300,000 is needed to complete the design prior to final construction work. Can you indicate to me what your plans are to reprogram such funds so that we can get the design completed?

Answer. Congress appropriated $750,000 in fiscal year 1988 to fully fund the coordination of an acceptable solution and to prepare the report containing the joint recommendations of the Pueblo and the Corps of Engineers for solving the high groundwater problems on Pueblo lands. Since the report has been completed and all funds expended, the Corps of Engineers' authority to allocate additional funds under the original 1988 Appropriation has been exhausted. Congress would have to authorize and appropriate $300,000 to complete final design and specifications for construction of the drain system and to coordinate them with the Tribal Council of the Pueblo de Cochiti, New Mexico.

Question. Second, it is important that the Congress receive the settlement report as soon as possible and then strongly support an appropriation of $11.9 million to meet the Federal government's obligation. Would you care to respond?

Answer. The Chief of Engineer's Report on Investigations, Pueblo de Cochiti and accompanying document have been submitted to the Assistant Secretary of the Army for Civil Works. The report was submitted by ASA(CW) to the Office of Management and Budget on April 11, 1991 to obtain their views regarding the program of the President. Should this review result in favorable findings, the document would be sent to Congress for construction authorization and an appropriation of funds.

RIO GRANDE FLOODWAY, SAN ACACIA TO BOSQUE DEL APACHE UNIT, NEW MEXICO

Question. The Rio Grande Floodway, San Acacia to Bosque del Apache Unit, New Mexico, is a project that consists of constructing and rehabilitating approximately 55 miles of existing spoilbank levee along the Rio Grande. The project would provide protection against the 100-year frequency flood to the city of Socorro, New Mexico, rural transportation and irrigation facilities, the Bosque del Apache Wildlife Refuge, and the Bureau of Reclamation's low flow conveyance channel.

Fourteen major floods have occurred in the area in the past 60 years. In six of the past ten years, the Bureau of Reclamation has spent several million dollars to maintain and protect the conveyance channel during periods of high flow in the Rio Grande.

This project is ready to go, however, a problem has arisen based on how your office has decided to interpret the local share requirements of the project. Despite the fact that something around sixty percent of the benefits of the project will go to Federal facilities, the position of your office has been to insist that the local share remain at 25 percent of the total project costs. Not surprisingly, the State of New Mexico and the local communities do not think this is fair.

I have introduced legislation to correct this situation—legislation that would require that the 25 percent local share be based on those benefits that accrue directly to the locals. I believe that this is only fair.

But I need to understand why you have chosen to interpret this matter the way you have. Would you please respond?

Answer. The distribution of project costs to the local sponsor is in accordance with the cost sharing criteria established in the Water Resources Development Act of 1986, PL 99–662. The Corps of Engineers does not have authority to modify these cost sharing requirements.

ABIQUIU DAM (EMERGENCY GATES), NEW MEXICO

Question. Construction of emergency gates to provide flood protection below Abiquiu Dam was authorized in the Water Resources Development Act of 1986. How much progress have you made toward completing this work?

Answer. Preconstruction Engineering and Design activities were initiated in fiscal year 1989. The Supplement to the General Design Memorandum will be completed in June 1991. Plans and specifications to install the second set of control gates have not been initiated.

MIDDLE RIO GRANDE FLOOD PROTECTION, BERNALILLO TO BELEN, NEW MEXICO

Question. The Corps of Engineers recently eliminated the credit for lands on the Middle Rio Grande Flood Protection, Bernalillo to Belen, levee project in New Mexico. Consequently, the sponsor's cash requirement has escalated from $3.3 million to $12.1 million. The local sponsor is strongly supportive of the project and was able to participate given the land credit, but is now unable to meet this unforeseen burden. There are 30,000 residents within the project's 270-year floodplain who are now unprotected. I understand that there are precedents for granting sponsors credit for land in cases like this. What can be done to eliminate this anomaly?

Answer. The basis for determining credit for lands to support this project is the same as that applied to similar projects, which is the fair market value. In determining fair market value, Corps appraisers consider what a knowledgeable and prudent person would pay for the land as it is affected by all encumbrances and restrictions of record.

Two appraisals were made of the land required for the Bernalillio to Belen project. The original appraisal failed to consider the impact of the existing Federal easement on the land's fair market value since the existence of easement was not known. The second appraisal, however, concluded that the project as encumbered by extensive existing easement had only a nominal fair market value. Accordingly, only nominal credit can be afforded. Therefore, it is our opinion that additional credit cannot legally be afforded absent a legislative directive to do so.

QUESTIONS SUBMITTED BY SENATOR SASSER

HAZARDOUS AND TOXIC WASTE

Question. As you know, the Nashville Corps of Engineers office has been increasingly active in environmental issues such as hazardous and toxic waste cleanup throughout the Ohio Basin region. I think that is a logical and commendable direction for the Corps to move in. My question to you is this: Is this a direction that the Corps is moving toward system-wide and, if so, do you have a detailed game plan that moves the Corps in this direction ?

Answer. The Corps of Engineers and the Environmental Protection Agency (EPA) joined forces in 1982 to clean up hazardous and toxic waste (HTW) sites under EPA's Superfund Program. The Missouri River Division (MRD) was selected as the Corps Superfund Design Center, using other selected Corps district as appropriate. Through phased decentralization, one HTW Design District is being designated at each Corps Division.

DYER COUNTY "LITTLE LEVEE"

Question. I recently visited with community leaders in Dyer County, Tennessee about a flooding problem in their area on the Mississippi River. Erosion of the river bank has threatened the integrity of the Dyer County "Little Levee". Last week, I wrote Colonel Willer, your District Engineer in the Memphis District, about this problem. I am hopeful the Corps can take a serious look at this problem and make the needed repairs to the levee with existing funds. Could you look into this matter and keep me informed about its status?

Answer. Since a portion of the bank caving poses a potential threat to the Dyer County Private Levee and prior bank protection work done by the Corps, work may be accomplished on that portion under Public Law 84–99. The Memphis District is currently preparing the necessary report to obtain approval and funding. If approved, the construction will begin during the upcoming construction season.

QUESTIONS SUBMITTED BY SENATOR REID

There are some ongoing projects in Nevada that the U.S. Army Corps of Engineers is involved in. I would like to ask a few questions about the status of these projects.

LOWER LAS VEGAS WASH WETLANDS

Question. In Clark County, in southern Nevada, the Corps is involved in a wetlands flood control project. Can you tell me what the status of this project is, what the required funding levels for this project currently are, and at what point the Corps will have completed their portion of the project?

Answer. The Lower Las Vegas Wash Reconnaissance Study was initiated in March 1991. The study's main emphasis is devoted to wetlands restoration. The Los Angeles District is examining several options to rectify the situation, including stabilization of the wash, revegatation, and possibly creation of new wetlands. The $350,000 allocated for this study in fiscal year 1991 is being used to complete a reconnaissance report by May 1992. The report will include future funding recommendations if the study results warrant continuation.

CURRENT CORPS ACTIVITIES IN NORTHERN NEVADA

Question. There have been numerous proposals in Northern Nevada for flood control projects. In a recent meeting with representatives from your office, they expressed the view that there was a lack of community support for some of the proposed projects. Can you tell me what projects in northern Nevada are being actively pursued by the Corps at this time, which ones have been abandoned, and what the required funding levels are for the ones that remain active?

Answer. Sir, I am unaware of any such lack of community support. For instance, we are currently preparing a reconnaissance study for the Lower Truckee River. This study addresses a variety of purposes including restoration of the environment, and we fully expect to continue into the feasibility phase with a local sponsor in May 1992. Funds are included in the President's budget for fiscal year 1992 to initiate this cost shared feasibility study. The Truckee Meadows project, located upstream of the Lower Truckee River study area, is currently in the preconstruction engineering and design phase. Local representatives have fully supported our efforts to date. We are currently reevaluating the feasibility of this project to account for significantly changed conditions in the area and associated cost increases. Any decision not to proceed would be based on unfavorable economics, not lack of community support. Finally, HR 2241, dated 8 August 1984, provided authority to study Washoe Valley and seven other communities in northern Nevada. Elko, Lovelock and Washoe Valley were the initial areas to be studied based on expected need and likely Federal interest. However, since no funds were appropriated for these studies, our authority expired in May 1990 pursuant to the provisions of Section 710 of the Water Resources Development Act of 1986. Funds were included in the fiscal year 1991 Appropriations Act to initiate a reconnaissance report for Elko, but these funds have been withheld by our Washington Headquarters since no authority currently exists. These funds will be made available for this study should an additional authorization be provided.

WASHOE VALLEY AND OTHER AREAS, ELKO

Question. Is the Washoe County flood control project one of those that is currently being implemented, or does it require additional authorization? If further authorized, is there funding available under existing monies to see this project completed?

Answer. Sir, funds of $150,000 were provided this fiscal year to initiate a $300,000 reconnaissance study for Elko. However, as I mentioned the study authorization for the Washoe Valley and Other Areas has expired, and until an authorization is provided, no funds can be expended. No funds are included in the President's budget for fiscal year 1992, however if the study is authorized this fiscal year the balance to complete the reconnaissance phase would be $187,000.

QUESTIONS SUBMITTED BY SENATOR DECONCINI

HOLBROOK LEVEE

Question. Could you please provide the Committee with the status of the Holbrook flood control project. Last year, you testified before the Committee that this project will be completed in June of 1994. Is this still the case? If not why the delay and when do you expect it to be completed?

Answer. No, sir, this project will not be completed by June 1994. That date was based on a 30-month construction period which included simultaneous levee construction, rights-of-way acquisition, and relocation of south side development. The construction schedule has since been extended to accommodate the desire of the local sponsor to complete the relocation portion of the project prior to levee construction because of the small risk of induced damage liabilities to the south side. The project could be completed about three and one-half years after receipt of construction funds.

Question. Is there sufficient funding in the budget request to allow the Corps to work at their capability in fiscal year 1992? If not, what is required for the Corps to work at their full capability in fiscal year 1992.

Answer. Sir, there is sufficient funding in the budget request of $140,000 to complete preconstruction engineering and design as presently scheduled, in March 1992. The project has not been budgeted for construction in fiscal year 1992. However, the project will be ready for initiation of the construction phase upon completion of PED. Initial construction activities would be the finalization of the Local Cost Sharing Agreement and monitoring the local sponsor's relocation activities.

CLIFTON, AZ

Question. Could you please provide the Committee with the status of the Clifton flood control project? Last year, you testified that this project will be completed in March, 1994. Is this still the case? If not why the delay and when do you expect it to be completed?

Answer. No, sir, this project will not be completed in March, 1994. The execution of a Local Cost Sharing Agreement and the initiation of rights-of-way acquisition have been delayed pending additional required state legislation which will permit the Arizona Department of Water Resources to cost share the project. We have recently been advised that the required legislation and subsequent provision of state funds will most likely delay the initiation of acquisition to July 1992. Accordingly the completion date has been slipped to February 1995.

Question. Is there sufficient funding in the budget request to allow the Corps to work at their capability in fiscal year 1992? If not, what is required for the Corps to work at their full capability in fiscal year 1992.

Answer. Yes, Sir. There is sufficient funding to allow us to work at our capability in fiscal year 1992.

NOGALES WASH, AZ

Question. Could you please provide the Committee with the status of the preconstruction engineering and design (PED) for the Nogales flood control project?

Last year, you testified that the PED will be completed in December, 1990. Is this still the case? If not why the delay and when do you expect it to be completed?

Answer. No, sir, PED was not completed in December, 1990 because the plan has changed considerably since we last testified. We revised the design of the west lateral collector channel consistent with the GSA planned new border station facility in that area and provided the design to GSA for inclusion with their construction this year. Additionally the design of the east lateral has been delayed while the IBWC confers with Mexico about plans to improve the channel in that country which could preclude the need for the east lateral. We are now concentrating on the design for the Chula Vista portion of the project and a new cost estimate and schedule are currently being prepared. We anticipated PED could be completed in September 1992.

Question. Is there sufficient funding in the budget request to allow the Corps to work at their capability in fiscal year 1992? If not, what is required for the Corps to work at their capability in fiscal year 1992?

Answer. No, sir, this project is not included in the President's fiscal year 1992 Budget. While the costs and schedule are still in the preliminary stages, we expect to reprogram additional funds to the project this fiscal year. An additional $330,000 will be required after fiscal year 1991 to complete PED.

RILLITO, AZ

Question. Could you please provide the Committee with the status of the preconstruction engineering and design (PED) for the Rillito flood control project? Last year you testified that the PED will be completed in August 1992. Is this still the case? If not why the delay and when do you expect it to be completed?

Answer. No, sir, PED will not be completed in August 1992. The project was delayed by manpower constraints and design problems with interior drainage. We now expect to complete PED in February 1993.

Question. Is there sufficient funding in the budget request to allow the Corps to work at their capability in fiscal year 1992? If not, what is required for the Corps to work at their full capability in fiscal year 1992?

Answer. Yes, sir, there is sufficient funding in the budget request.

ARIZONA CANAL DIVERSION CHANNEL (ACDC)

Question. I have been contacted by a number of my constituents concerning the impact of the Arizona Cross Diversion Canal (ACDC) as it is currently designed. The open design of the channel results in significant environmental impacts to the surrounding areas. Could you please tell the Committee how much it will cost to cover Reach 4 of the ACDC from roughly 32nd Street east to Cudia Wash in Paradise Valley. Also, how much would it cost to extend the cover of the ACDC an additional 150 feet to the east at the Central Avenue Community Plaza site and cover an area of the Arizona Biltmore Estates from approximately the boundary of the Arizona Biltmore property east to 32nd Street?

Answer. Sir, The additional design and construction costs for covering the two reaches of the ACDC from the Arizona Biltmore Estates to 32nd Street and from 32nd Street to Cudia City Wash are estimated at $1.7 million and $2.5 million, respectively. Further additional costs would be incurred for these reaches because of delays to the contractor's schedule and disruption of his procedures if design cannot start until fiscal year 1992. If funding is provided for design by the first of October, 1991, the delay costs are estimated at $1.0 million. If design funds are not provided until December 1991, the delay costs would be $1.5 million.

Construction of the channel east of Central Avenue is nearly complete, so adding a structurally integral cover is not practical now. A structurally independent cover, essentially a bridge, could be added to the channel for a cost of about $650,000.

CLOSING REMARKS

Chairman BYRD. Let me personally thank you for the good work that you do for the Nation and also for my own little nation, the Mountain State, which produced Stonewall Jackson before it became a State. Do you have any further statement or remarks?

General HATCH. I don't, sir.

Chairman BYRD. You don't have any questions of me?

General HATCH. No, sir; other than to repeat that, I thank the committee for its continued support and direction in the past, and look forward to the future. I said that when you were not in the room. And, thank you very much for your help, sir.

Chairman BYRD. Thank you. You have a great organization, and I have had the privilege and the pleasure of working with that organization now for going on 39 years, and the privilege and pleasure of working with you for several of those years, and I look forward to our future cooperation.

SUBCOMMITTEE RECESS

The subcommittee stands in recess until 2 p.m., Tuesday, May 14, in this year of our Lord 1991.

[Whereupon, at 3:50 p.m., Thursday, May 9, the subcommittee was recessed, to reconvene at 2 p.m., Thursday, May 16.]

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR FISCAL YEAR 1992

THURSDAY, MAY 16, 1991

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 2 p.m., in room SD–192, Dirksen Senate Office Building, Hon. J. Bennett Johnston (chairman) presiding.

Present: Senators Johnston, Reid, and Domenici.

DEPARTMENT OF ENERGY

OFFICE OF ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT

STATEMENT OF LEO P. DUFFY, DIRECTOR, ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT, DEPARTMENT OF ENERGY

OPENING REMARKS

Senator JOHNSTON. The hearing will come to order. We continue hearings on the fiscal year 1992 budget for Department of Energy programs. Today we will review the budget request for environmental restoration and waste management, nuclear waste disposal fund, beginning with testimony from Mr. Leo Duffy, Director of the Office of Environmental Restoration and Waste Management, and second we will hear from Mr. Frank Peters, the Deputy Director of the Office of Civilian Radioactive Waste Management.

We are sorry that Director John Bartlett is unable to testify due to an emergency, but we look forward to hearing oral testimony first from Mr. Duffy and then from Mr. Peters.

The fiscal year 1992 budget request of the President for the Office of Environmental Restoration and Waste Management is almost $4.6 billion, including the fiscal year 1991 supplemental appropriation. This is an increase over the fiscal year 1991 appropriation of about $1.4 billion, or more than 42 percent. Mr. Duffy will review the program with us and explain the significant changes reflected in the budget request.

Welcome, Mr. Duffy. Please proceed.

PREPARED STATEMENTS OF SENATOR REID AND SENATOR BRYAN

Senator REID. Mr. Chairman, I have a statement, that I would like to have placed in the record in its entirety, and also one from Senator Bryan.

Senator JOHNSTON. Thank you very much.

[The statements follow:]

STATEMENT OF SENATOR REID

Mr. Chairman. There have been several hearings recently, both in the House and the Senate, on the status of the Energy Department's Yucca Mountain program. Most of the attention this year is focused on the Bush Administration request that Congress legislatively preempt Nevada's authority to issue permits for work at Yucca Mountain.

I have testified at these hearings that one of the reasons that Nevada is reluctant to issue permits for work to go forward is that we don't believe that the Energy Department is committed to an objective study of Yucca Mountain's suitability as the site for a permanent waste storage facility. Much of that skepticism has come about because Congress has consistently refused to provide Nevada with the oversight funds promised them under the Nuclear Waste Siting Act.

Last year, Nevada only received twenty-five percent of what they requested for State oversight activities; much the same story holds true for the previous year. This year I suspect we face the same problem. John Bartlett, Director of the Office of Civilian Radioactive Waste Management stated in his confirmation hearing that State and local government should receive about five-percent of what the federal government spends. The federal government's budget was $292 million for FY 1991. That means that the State and local governments should have received about $15 million for their efforts. Obviously, the Congress didn't provide anything like that level of funding because they actually received $4.1 million.

Nevada is left in a "catch 22" situation. They are not given the money they need to do adequate oversight of federal activities. Then they are threatened with federal preemption of their regulatory rights because they don't want to give the Energy Department a blank check to move ahead with their characterization activities as they see fit.

There has been much talk coming out of the White House and Senate Energy Committee recently about the need for more cooperation from Nevada—for there to be a "two-way street" in connection with Yucca Mountain. However, when it comes to providing Nevada with adequate funding to carry out their legitimate oversight responsibilities under the law, Nevada is being asked to "ride the berm" while the Energy Department gets all six lanes of the Interstate.

Mr. Chairman. I hope we see serious consideration of Nevada's funding requests in this year's appropriations bill.

STATEMENT OF SENATOR BRYAN

As you consider the Department of Energy's fiscal year 1992 budget request for the civilian radioactive waste management program, I would like to bring to your attention the related funding needs of the State of Nevada's oversight activities.

Governor Miller recently indicated to the Energy Committee that the State is processing environmental permits in accordance with the decisions rendered in its the ongoing litigation with DOE. As planning for site-specific activity increases, the need for enhanced state oversight activity will doubtless increase as well. As you are aware, the State's oversight efforts have been severely constrained by a pattern of inconsistent and inadequate funding. In light of the funding increase sought by DOE, it is essential that Nevada funding be enhanced by at least the same percentage increase. I would also suggest that parity be established between the funding level for the State program and the funding allowed for "affected units of local government."

It is also important to a coordinated oversight effort that funds available to the University of Nevada system for oversight analysis be passed through to the universities by the Nevada State agency for Nuclear Projects. As the recent testimony by the GAO has indicated, one of the main management defects of this costly program is a lack of adequate outside review by independent experts.

The State, in prior budget requests, has indicated an adequate program for oversight should be funded at about $23 million dollars. I would suggest your committee consider a minimum funding level of $6,300,000 for the State program, and a similar amount for local governments, an increase comparable to the 25 percent increase sought for the DOE program. Since the GAO has recently indicated that the program's existing fee structure is inadequate and fees will have to increase or at least be indexed to inflation, I understand that a $23 million appropriation for the State's efforts may not be possible this year; however, I do believe an amount between the minimum of $6.3 million I believe is necessary and the optimal $23 million would be a reasonable approach.

I would be pleased to discuss this budget item with you at any time, since I consider it of critical importance to this program. Thank you for your attention to this matter.

SUMMARY OF BUDGET REQUEST

Mr. DUFFY. We have a prepared statement that we entered for the record, and I have an oral statement here, which I will try to get through rather quickly, to identify the program.

I appreciate this opportunity to discuss the fiscal year 1992 budget. The Department of Energy, as you know, is faced with a substantial task of cleaning up significant levels of radioactivity from the last 40 years of sponsored activities. The Environmental Restoration and Waste Management Office was established a year ago. The fiscal year 1992 budget is presently under two separate appropriations, which is consistent with the Fiscal Year 1991 Energy and Water Development Appropriations Act. Those two appropriations accounts are "Energy, supply, research, and development," and the "Atomic energy defense activities." The total for fiscal year 1992 is $4.2 billion. It contains $3.7 billion being proposed under the AEDA, and an appropriation of approximately $500 million for the energy supply, research, and development activities. The total program is approximately $600 million above the fiscal year 1991 program, when you take the recently enacted supplemental into consideration.

A number of factors contribute to the requested funding increase. One is the addition of several significant activities in the EM program that were funded by other DOE offices in fiscal year 1991. We anticipate this program to continue into the future as retired facilities from other DOE programs are added to the overall EM responsibility. Other contributors to the requested increase are costs associated with meeting the requirements of a number of compliance agreements, which we have negotiated with our environmental regulators.

COMPLIANCE AGREEMENTS

I have a chart I would like to show you on compliance agreements. When we look to the future, as you can see, these compliance agreements have gone from 9 in 1985 to 60 that were signed by 1991, with another 20-some odd that are presently being negotiated with the States.

Senator JOHNSTON. Those are numbers?

Mr. DUFFY. Those are numbers of agreements that we have with the various States. There are a lot of reasons for that. One of which is that present regulations do not cover very well the unique waste materials generated by the Department of Energy. As a result, when we have to meet the requirements, we have to establish a unique agreement with the State. Land disposal restricted waste is one.

We have very unique materials that are not covered under RCRA and, as a result, we have to determine how we are going to handle, store, and treat this material. You can see part of the budget is driven by the agreements.

PROGRAM PHILOSOPHY

At this point, it is necessary to explain our basic philosophy. Our No. 1 priority is the health and safety of the workers and the public. In order to do this, we have established the extent of contamination that is the most serious health threat, and then we have put those as the first things to either contain, confine, or fix. Once the contamination has been stopped, the health threat is minimized. But in some cases immediate action is warranted, and we have taken those, as evidence of our No. 1 priority.

Effectively managing this growth is the major problem that we have. Going from about $1.6 billion in fiscal year 1989 to $4.2 billion in fiscal year 1992 is a tremendous increase, and we are increasing our staff at the same time. Accordingly we are proceeding on a number of fronts to track the program's progress and insure efficient use of the funds. The Department of Energy as a whole, and EM in particular, is taking a hard look at the cost control measures.

ACTIVITY DATA SHEETS

When we first started the environmental restoration and waste management operation, we started with what we call activity data sheets. Every one of our operations has an activity data sheet. In fiscal year 1990, we had 2,000; in fiscal year 1991, we had about 2,150; and in fiscal year 1992, we have 2,300 activity data sheets. We are developing methods to track appropriations versus expenditures through these data sheets. We are also modifying the methods where we compile and use the large data base associated with the EM program, and we are implementing a program to track accomplishments on a real-time basis, within 30 days. This will not be available until approximately fiscal year 1993. We are working on it now; we have some of the environmental restoration area documented, but we do not have the waste management operation there yet.

I would like to touch briefly on what we are doing in each of the four specific areas. Under the cost control measures, EM has put in place a number of initiatives to better control the cost and cost estimating. In fiscal year 1990, we requested the Corps of Engineers and State agencies to review our cost estimates as to the individual facilities. Hanford was the first one, since that was a major program.

At the departmental level, the Office of Financial Management and Controller has led a tiger team to Hanford, to inspect and identify our methods of budget formulation. The Controller has already initiated and has underway an effort to improve the Department's cost control capability. Finally, the Secretary directed the Office of Procurement Assistance and Program Management to form a special in-house team to study the business management practices of the management and operating, or M&O, contractors. This was done at Hanford back in the June/July timeframe, when we took over the Hanford site.

This Office has provided line organizations with cost estimating guidance for the 1993 through 1997 5-year plan. We have conducted independent cost reviews by the line manager. I personally review each one of the budgets, in the field or at headquarters. In addition, EM staffers participate in an interagency task group on waste cost estimating, which provides a forum for exchanging information from other agencies who have a similar problem.

In regard to the expenditures versus appropriations, I will provide the panel with a detailed summary of the status of current fiscal year expenditures, which compares 1991 appropriated amounts with the obligations with the first one-half of the fiscal year. Briefly, to summarize, in waste management we have obligated 62 percent of the funding from 1991; corrective activities, 64 percent; environmental restoration, 66 percent; technology development, 59 percent; and transportation, 93 percent. So these figures reflect that we are on target.

In data base management, we are improving the program implementation. In response to a recent inspector general report, a recommendation was made to establish a comprehensive corporate data base to collect information on all program activities in EM. An information steering committee was created to address planning and budget control. In a data base management system the activity data sheets [ADS] are a primary method for planning control and cost control.

It is extremely important to emphasize the major role that the activity data sheets play in setting program priorities. They are developed in conformance with the priority provision of the 5-year plan, with strong input from the State. We have had 10 meetings on our 5-year plan with the State and tribal government working group. They review our estimate before we submit them to the OMB. They do not participate in any of our budget compilation, just in the estimating area.

As part of the 1993–97 5-year plan, EM has developed activity data sheets for two cases to enhance EM's ability to set priorities in the future. We have a preliminary unconstrained case and an OMB target case that is based on outyear targets identified in the President's fiscal year 1992 budget. The creation of activity packages is another area where we roll up the ADS and unify goals and common elements.

We need to develop a systematic automated approach to measuring progress and we are doing that. EM is developing a rigorous system for track programs so we can establish where we spend our money; establish consistent units for measuring program accomplishments, allow for monthly reporting, and tracking of all major commitments. We are also working to integrate our planning, management accountability, and prioritization systems, and establish a complete cost estimating process.

PROGRAM ACHIEVEMENTS

Although it is important to give you an idea of how we are going to track these accomplishments, it is far more important to tell you what the EM program has actually achieved. We have a chart over here of some of the achievements. I think WIPP is a major one. We expect to have WIPP on-line, if there is appropriate legislation concerning land withdrawal. We are going to be ready to receive waste at WIPP in July of this year.

We have the defense waste processing facility in cold operational test now. We are managing day-to-day programs for the total waste production operation. We have underway 200 assessments at various sites—29 remedial action programs, 32 cleanup programs, and 36 closures. In fiscal year 1990 we completed four major closures at Oak Ridge and two major closures at Savannah River.

In the waste material, we have removed 35,000 cubic feet of tailings from Grand Junction, 12,000 drums from the Hanford solar basin, and 6,200 blocks of pondcrete at Rocky Flats. At Lawrence Livermore, we have treated 35 million gallons of water. We have decommissioned four retired facilities. Fifty-nine compliance agreements, as I indicated, were in effect at the end of fiscal year 1990, and another 22 will be completed in fiscal year 1991.

One significant accomplishment is that, we have an integrated technology demonstration at Savannah River. I do not know if you saw it in the paper yesterday, the criticism of the Superfund operation on ground water treatment, where most scientists are looking now at the pump-and-treat method as a very ineffective, inefficient, and costly operation. We demonstrated at the Savannah River site what we call directional drilling, using air treatment in the saturated zone of the water table, and air evacuation at the beta zone, so that in 75 days we removed 15,000 pounds of trichlorethylene for about $3 million. In the previous 2 years, we removed 15,000 pounds of trichlorethylene for $54 million, and we never got down to meeting the Clean Water Act standard, but with the integrated demonstration, we have.

So, we now have a program. We eliminated the use of chlorinated hydrocarbon solvents at the Oak Ridge Y–12 plant, which is about a $34 million savings, and we have real-time instrumentation that we are testing now that will result in about a $200 million savings. Reusable HEPA filters for about $98 million. We are going to use stainless steel filters that can be reused, which cuts down on the amount you have to send to a disposal site and it cuts down on the cost.

The Department has recently concluded a successful negotiation with the EPA and the State of Washington, which is a change in the testimony that was submitted to you. We now have an agreement to start construction on the canister building for the waste vitrification operation. We will start the construction for bringing auxiliary power supplies into that area and we are looking at additional tankage to resolve the 101-SY problem. I think we have developed a good working relationship with the State of Washington.

We are still maintaining a goal for hot testing of the Hanford waste vitrification plant in December 1999, but that is contingent on having a pretreatment operation, which we will discuss with the State of Washington in December 1991. The study in December requires that we delay the start of construction until we are sure what kind of pretreatment we are going to use, but we are maintaining an operational date of December 1999.

CONCLUDING REMARKS

In conclusion, it is a fact of life that the EM program will continue to grow, particularly as other parts of the DOE complex are retired. EM will be responsible for current waste streams, as well as those from future production efforts. As production needs change, and facilities are removed from service and consolidated, large inventories of very unique materials will be turned over to EM. There are no technologies presently available to handle that material. That is going to result in either a large-scale technology development program or a large storage operation.

As facilities shift from a production mode to a cleanup mode, the volume of waste streams that need to be processed in the near term will increase. The amount of increase will depend on activity levels, as well as on storage and treatment technologies. A large inventory of these unique materials exist throughout the DOE complex. If it is determined that some of this material is no longer needed to meet defense needs and is subsequently characterized as waste, the program will have to address these needs.

I am the first to admit that the EM program is difficult to manage. Had I known it was this difficult, it may have been a decision I would have made differently in the past 2 years. However, when you lay the program's size and commitments on the top of unknowns that I have just outlined, it is apparent that the true managerial challenge is only beginning. In addition, we need desperately to add additional Federal employees to oversee the program. In the future, there will be a need for adjustments to provide for the unknowns as they become programmatically identified.

We need to develop a better protocol for States, EPA, OMB, and Congress to address these issues and the changes in the program, and we are willing to work closely with the subcommittee in this regard.

Thank you, Mr. Chairman.

[The statement follows:]

Statement of Leo P. Duffy

Mr. Chairman, I appreciate the opportunity to appear today to discuss the Department's fiscal year 1992 budget request for Environmental Restoration and Waste Management.

INTRODUCTION

The Department of Energy (DOE) is faced with the substantial task of cleaning up significant levels of radioactive and chemical pollutants introduced into the soil, surface water, and ground water at DOE and related sites as a result of over 40 years of defense production activities. A little over one year ago, the Office of Environmental Restoration and Waste Management (EM) was established to administer the Secretary's Environmental Restoration and Waste Management Five-Year Plan and manage the cleanup program, as well as provide centralized management and planning of projects contained in the Five-Year Plan. EM is in the process of preparing an environmental impact statement on its environmental restoration and waste management program. This Programmatic Environmental Impact Statement is a key part of a comprehensive process to establish a long-term plan that will guide future remediation and waste management activities. The magnitude of the environmental cleanup, which at the present time appears to be the largest of any of the federal agencies, is reflected in the substantial costs associated with this effort. The FY 1991 appropriation for EM activities was $3.2 billion, with an additional $340 million requested in a supplemental appropriation. For FY 1992, we are requesting slightly over $4.2 billion. A number of factors contribute to this increase, one of which is the addition of several significant activities to the overall EM program that were funded by other DOE offices in FY 1991. We anticipate this trend to continue in the future as retired facilities from other programs are added to the overall EM responsibility. Other contributors to the requested increase are costs associated with meeting requirements of the increased number of compliance agreements which have been negotiated with the EPA and State regulators.

These compliance agreements obligate the Department to meet specific milestones to bring DOE activities into compliance with a variety of Federal and State environmental statutes. The cleanup costs may continue to rise as new information is developed and additional agreements are negotiated. At the end of FY 1990, 59 such agreements were in place; at the end of FY 1991, this number will increase to 82 with even more anticipated by the end of FY 1992. These agreements are usually based on very preliminary data and therefore the cost estimates are not fully developed. Failure to meet the terms of the various compliance agreements has resulted in Federal and State regulators issuing Notices of Violation, penalties, and fines. When technical difficulties are encountered or new information is developed, the Department has attempted to adjust these agreement milestones, but the regulators generally have been reluctant to reconsider. Recent difficulties with the Tri-Party Agreement between DOE, the State of Washington and EPA concerning milestones associated with the vitrification plant at the Hanford Site illustrate this point. The Fernald agreement is another example where there has been a reluctance to renegotiate.

The costs of the DOE environmental restoration and waste management activities will continue to increase as EM becomes responsible for additional facilities, and is tasked with bringing those facilities into compliance with Federal and State environmental statutes. EM's activities are composed of 3 major areas: Waste Management, Environmental Restoration, and Technology Development. All areas are in various stages of implementation; as a result, significant uncertainties exist. We must continue to take a hard look at our programs and make certain we are making efficient use of the funding provided. Problems must be identified early, and solutions found that result in containment and confinement of immediate problems while considering technical acceptability and cost effectiveness. We are working hard to get a better handle on the cost-estimating process; once this process is refined and applied uniformly in conjunction with the Five-Year Plan objectives, we anticipate a cost effective program that can be implemented for the first phase of the DOE cleanup program.

ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT FIVE-YEAR PLAN

Planning for the near-term future of the Department's environmental restoration and waste management efforts is done within the context of the Five-Year Plan. This ongoing effort, currently in its third year, is an important vehicle by which EM charts its five-year course of action and involves the public in that decision-making process. The first Five-Year Plan was issued in August, 1989, and the second in June, 1990. The third Environmental Restoration and Waste Management Five-Year Plan, covering FY 1993–1997, is now being developed. Each year's plan shows our progress in attempting to reduce the uncertainty associated with the difficult problems we face. The plans reflect the Department's near-term programmatic priorities for environmental restoration and waste management, and consolidate the clean- up activities in areas formerly under the cognizance of Defense Programs, Nuclear Energy and Energy Research.

One of my major concerns as Director of the Department's efforts in these areas has been to create a unified agenda for clean-up, waste management and compliance with environmental regulations. With each iteration of the Five-Year Plan, our efforts are becoming more integrated, more forward-looking, more decision-oriented, and more capable of addressing the many interested parties who have a stake in DOE's environmental restoration and waste management initiatives. The Five-Year Plan is oriented toward near-term actions. The Programmatic Environmental Impact Statement (PEIS) will specifically address the long-term goals generally summarized in the Five-Year Plan.

Our FY 1992 budget request was developed from data provided in the June, 1990 update of the Five-Year Plan. We have continually attempted to focus on validated budget numbers and to update our estimates as new information becomes available. Therefore, the estimates that purposes and appear in our plan are not always consistent with the validated levels reflected in our budget request. One of our major initiatives to improve the quality of our cost estimates, and reduce these discrepancies, is the use of independent cost validation teams.

Our current efforts, while helping to set priorities for the coming year, are also consistent with the intent of the Secretary's strategic planning initiative. The Office of Environmental Restoration and Waste Management has developed a strategic plan which includes program mission, goals, objectives and strategies. Our goals affirm our commitment to reducing risk to human health and the environment, to cost-effective management, and to a clear and open process. We are in the process of refining our strategic plan for FY 1993–97. More important, we are currently implementing the strategies identified in our strategic plan.

One major EM initiative is called roadmaps. EM has developed the roadmap methodology to identify: 1) key issues at the installation level that need to be addressed to assure that sites meet their Environmental Restoration and Waste Operations compliance and clean-up goals, and 2) actions that must be taken if those goals are to be met. Basically, roadmaps are a planning tool, coupled with our strategic plan, that will tell us how to get from one point to another. Roadmaps will firmly establish the linkages between activities and issue resolution. Therefore, they provide a framework assessing resource, technology, and trained manpower needs based on our commitments. With roadmaps as a starting point, we have an important basis for cost analysis and budgeting. For this year, roadmaps are being developed at four critical sites/facilities: Rocky Flats, the Feed Materials Production Center, the Single-Shell Tanks at Hanford, and the Idaho Buried waste Program. Lessons learned during this first round of roadmaps will be applied to the entire complex, which will begin their roadmapping efforts later this year, with expected completion by September 1991.

EM has initiated independent technical and financial reviews to assess the adequacy of cost estimates, and has organized cost estimation/validation teams to review the data provided by each Field Office. In accordance with EM guidance, the purpose of these reviews will be to assess the adequacy of cost estimates submitted as part of the Five-Year Plan. This is the first year of an independent cost validation effort and part of a major initiative to improve the quality of budget submission and the Five-Year Plan cost estimates.

EM, in an early version of the 1989 Environmental Restoration and Waste Management Plan, recommended a national system for prioritizing DOE environmental restoration and waste management activities based on health and risk. DOE was requested by EPA and the States to postpone or delete this initiative from the Five-Year Plan. DOE also recommended national standards; however, this was also deleted at the request of the States. EM has responded to concerns raised by external groups regarding the development of prioritization systems. A new prioritization system for environmental restoration is being developed in close consultation with the public, including state governments and tribal interests, and is being tested for FY 1992. EM has delayed further development of a priority system for Waste Operations to allow for additional discussions with external groups, including State and Tribal government representatives, concerning the appropriate approach to prioritization of waste operations efforts. For Waste Operations, we will continue to use the original four priority categories until a revised prioritization system can be implemented.

Under the current priority system, Priority 1 includes activities necessary to prevent near-term adverse impacts to workers, the public, or the environment; as well as ongoing activities that, if terminated, could result in significant program or resource impacts. Priority 2 includes activities required to meet the terms of agreements between DOE and local, State, and Federal agencies. These agreements represent commitments to complete activities on mutually agreed upon schedules. Priority 3 includes all other activities required for compliance with environmental regulations. Priority 4 includes activities that are not required by regulation but would be desirable to accomplish. This 4-tiered system will continue to be used pending consensus on the development of a risk-based priority system.

PUBLIC REVIEW OF THE FIVE-YEAR PLAN

Secretary Watkins has created an atmosphere at DOE that is encouraging constructive criticism. As I reported last year, DOE invited representatives chosen by the Governors of Colorado, Idaho, Kentucky, Missouri, Nevada, New Mexico, Ohio, South Carolina, Tennessee, and Washington to review the Environmental Restoration and Waste Management Five-Year Plan while it was being developed. In addition, the Plan was reviewed by elected leaders of the Yakima Indian Nation and the Shoshone-Bannock Tribe, representatives from the National Conference of State Legislatures, National Association of Attorneys General, and many other interested parties. The Plan was reviewed for its technical content and approach by the National Academy of Sciences' Board on Radioactive Waste Management. DOE also sought EPA and the Office of Management and Budget views, and has attempted to address the concerns expressed by all of these groups. Participation by the States and Tribes has been institutionalized in the State and Tribal Governments Working Group (STGWG), which meets at four critical times during the development of the Five-Year Plan. Public interest in the Department's Environmental Restoration and

Waste Management efforts remain high; nearly 8,000 copies of the FY 1992–96 plan have been distributed to date.

Increasing opportunities for public involvement, as reflected by the new requirements for public review of initial Five-Year Plan activities in March, 1991, is part of EM's ongoing commitment to open and meaningful external input into its planning processes. In response to requests for earlier, more substantial public participation in EM's planning processes, EM has expanded the opportunity for external involvement in, and comment on, the Five-Year Plan and its components. Public involvement opportunities were expanded by adding a requirement for public meetings during the development of the basic Five-Year Plan input. The meetings are designed to identify public concerns with our preliminary planning, not to focus on the level of funding for particular issues. Later reviews by the State and Tribal Governments Working Group (STGWG) of the draft Five-Year Plan, and by the general public of the published Five-Year Plan and the Site-Specific Plans, provide additional opportunities to understand how these issues were addressed and to identify additional concerns with the program. The purposes of this increased public involvement are:

—To provide an opportunity for the public to see activities that are proposed to be included in the next Five-Year Plan;

—To provide the public with a better understanding of EM processes for, and results of, ranking environmental restoration activities and categorizing corrective actions and waste operations activities; and

—For DOE to better understand the public's views on its planning processes and results.

All EM field offices will be scheduling meetings with the regulatory community and the public to present EM plans, including prioritization initiatives. In response to External Review Group (ERG) and STGWG comments, all field offices are providing for earlier and increased participation in EM's planning and prioritization efforts. Interests to be represented should include, as appropriate, state and federal regulators, elected state and local officials, Indian Tribes, environmental organizations, and other members of the public. The exact format of these sessions will be designed to meet the particular needs of each site, and will be publicized in advance. Each field office has also been directed to provide follow-up to comments made, and issues raised, during the public reviews.

In addition to these meetings, EM is attempting to broaden the sectors of the public involved in the waste management and clean-up programs. EM has been actively participating in a number of technical and professional conferences and meetings. Through our educational initiatives, we will be involved in pre-college out-reach, including providing information to Parent/Teacher Associations (PTA) and other such civic groups, to provide information related to the Department's EM activities.

The Secretary has made firm commitments to public involvement in both the five-year planning process and the development of prioritization systems. Early and substantive involvement of the public is essential for fulfilling these commitments. While providing for increased public input increases the burden on field offices in the middle of meeting a very tight schedule, the Department is committed to addressing the concerns raised by STGWG and the ERG. Within the constraints of the Federal budget process (which dictates both the substance and timing of releasing budget estimates), EM is developing methods for addressing their concerns.

BUDGET OVERVIEW

The Office of Environmental Restoration and Waste Management (EM) administers the Five-Year Plan. This Plan is the cornerstone of the Department's near-term strategy to consolidate and coordinate DOE's cleanup activities. Estimated costs for FY 1991–96 for completing the highest priority activities of the Five-Year Plan (including funding for cleanup of uranium enrichment facilities) is $20.5 billion.

The FY 1992 budget request is presently under two separate appropriations, which is consistent with the FY 1991 Appropriations Act. They are the Energy Supply Research and Development (ESR&D) and the Atomic Energy Defense Activities (AEDA) appropriations. The Department is also submitting a Supplemental request in the Atomic Energy Defense Activities appropriation for FY 1991. The EM portion of the Supplemental request is $340.0 million. The Supplemental request in concert with the FY 1992 budget request of $4,228.5 million will provide for a total program of $4,568.5 million ($4,045.0 million for AEDA and $523.5 million for ESR&D activities). That is an increase over the FY 1991 appropriated level of $1,341.6 million or 42 percent. Although this initially may appear to be high, there is justification for this increase. New functions have been transferred to EM for inclusion in the FY 1992 budget (e.g., the Plutonium Finishing Plant, the PUREX Plant, and the

N-Reactor) that were in other DOE programs in FY 1991. Additional action is required at certain facilities to update sensitive projects. Table 1 summarizes the FY 1992 budget request.

TABLE 1.—ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT FUNDING SUMMARY

[Dollars in millions]

	Fiscal year—			Percent change 1992 versus 1991
	1990 actual	1991 appropriations	1992 request	
Waste management:				
AEDA	$1,141.5	$1,570.8	$2,377.5	+51
ESR&D	122.1	196.1	167.5	−15
Total	1,263.6	1,766.9	2,545.0	+44
Corrective activities:				
AEDA	87.8	145.4	110.1	−24
ESR&D	17.0	23.4	29.9	+28
Total	104.8	168.8	140.0	−17
Environmental restoration:				
AEDA	506.5	764.2	1,174.4	+54
ESR&D	150.3	211.8	326.1	+54
Total	656.8	976.0	1,500.5	+54
Technology development:				
AEDA	183.4	200.3	339.4	+69
ESR&D	.1	5.7		−100
Total	183.5	206.0	339.4	+65
Transportation management: AEDA			18.9	
Waste transportation and site management: AEDA	59.9	85.1		
Program direction: AEDA	5.5	24.1	24.7	+2
Subtotals:				
AEDA	1,984.6	2,789.9	4,045.0	+45
ESR&D	289.5	437.0	523.5	+20
Total	2,274.1	3,226.9	4,568.5	+42
Less adjustment for fiscal year 1991 supplemental request			−340.0	
Adjusted total	2.274.1	3.226.9	4.228.5	

This budget is composed of the following major activities:

—Waste management activities comprise the largest portion of the estimate ($2,545.0 million) or 56 percent of the total FY 1992 EM program. This reflects the costs of constructing and operating waste management facilities.

—Corrective Activities represent the smallest component of the costs ($140.0 million). Most of these funding requirements are near-term, reflecting the need for prompt action to bring operational facilities into compliance with existing requirements.

—Environmental Restoration funding of $1,500.5 million is more than twice the FY 1990 level. This-reflects the continuing transition from the investigation and feasibility studies under CERCLA and RCRA to actual remediation projects. Since the ultimate scope and complexity of the restoration projects has not yet been determined, this activity has the greatest degree of cost uncertainty.

—Technology Development is essential to the overall cleanup and waste management program by the development of innovative permanent disposal solutions that are safer, cheaper, and faster. The objective of this activity is to accelerate the conception, creation, development, and deployment of the next generation of environmental cleanup and waste management technology. The FY 1992 request of $339.4 million represents approximately 7 percent of the total EM program.

—Transportation Management ($18.9 million) is responsible for assuring the safe, secure, and economical transportation of DOE materials, including radioactive and other hazardous materials and waste, to meet the needs of Departmental programs.

—Program Direction ($24.7 million) provides for the Headquarters staff responsible for developing policy, administration, budget formulation and execution, long-range planning, monitoring and evaluating contractor performance and providing the linkage between the Department and other agencies, Congress, public interest constituencies and the private sector.

The combined requests for the FY 1992 budget and the FY 1991 Supplemental Appropriation will result in major attainment of the goals and objectives presented in the June 1990 update of the Five-Year Plan. The following provides more details on the FY 1992 budget request for the major program activities which comprise the Environmental Restoration and Waste Management program.

WASTE MANAGEMENT OPERATIONS

The scope of the Waste Management Program is: (1) to manage waste produced by the Department's processing, manufacturing, and research activities and (2) to conduct treatment, storage and disposal operations in a safe and environmentally acceptable manner. The majority of the waste managed by this program already exists. For instance if all of the Department's activities that generate waste were to cease, over 90 percent of the requested funding would still be needed to maintain safety and environmental compliance. Compliance with environmental laws and regulations is a major requirement for this program. Over 90 percent of the funding request is required to comply with the Resource Conservation and Recovery Act, the Clean Air Act, the Clean Water Act, and similar environmental statutes. This program includes four major projects for waste treatment and disposal; they are: the Waste Isolation Pilot Plant in New Mexico, the Defense Waste Processing Facility in South Carolina, the Hanford Waste Vitrification Facility in Washington, and the West Valley Demonstration Project in West Valley, New York.

As discussed in the budget overview, the FY 1992 budget request is being proposed under two separate appropriations: Energy Supply Research and Development (ESR&D) and Atomic Energy Defense Activities (AEDA). The Department is also submitting a Supplemental request in the Atomic Energy Defense Activities appropriation for FY 1991. The Waste Management portion of the Supplemental request is $192.4 million. The Supplemental request, in concert with the FY 1992 budget request of $2,352.6 million, will provide for a total program of $2,545.0 million ($2,377.5 million for AEDA and $167.5 million for ESR&D activities). That is an increase over the FY 1991 appropriated level of $778.1 million or 44 percent.

The FY 1992 request for the AEDA (Defense) activities is $2,377.5 million. This is an increase of $806.8 million over the FY 1991 appropriation. This 51 percent increase is for activities required to support tasks necessary to comply with Resource Conservation and Recovery Act (RCRA)-based waste management regulations, meet required milestones established by formal compliance agreements with the regulators, and maintain safe and environmentally sound operations of our extensive complex. It also includes an increase of about $205.0 million in base operations related to treatment, storage, transport, and disposal of radioactive, hazardous, mixed or sanitary waste in compliance with all applicable Federal, State and local requirements and DOE orders, and landlord support for infrastructure facilities at Idaho and Richland. The budget reflects funding of $182.7 million for Nuclear Materials Production Program facilities at Richland, including the PUREX Plant, which is in standby; the Plutonium Finishing Plant which would be operated only for material stabilization and cleanup; and the K area storage basin. There is an increase of $46.0 million for the Plutonium-Uranium Extraction (PUREX) Plant at Hanford reflecting the transfer of that program from Defense Programs to EM in the fourth quarter of FY 1991. An Environmental Impact Statement on treatment of the irradiated fuels at Richland will soon be initiated which may identify a possible future waste management mission for PUREX. If processing in PUREX is selected as the waste management option following the Environmental Impact Statement and issuance of a Record of Decision, it will be used for the treatment of these fuels prior to their storage and disposal. If PUREX is not the selected option, it will be scheduled for Decontamination and Decommissioning. The budget also provides $195 million in new construction essential to meeting treatment, storage or disposal of regulated waste and to continue on-going construction projects. Finally, there is an increase in this budget of $67.7 million for the program direction activity. This activity was funded in a central account in prior years.

The FY 1992 request for the ESR&D (Non-Defense) activities is $167.5 million, a decrease of $28.6 million from the FY 1991 appropriations. This 15 percent decrease reflects the transfer of funding for the Fast Flux Test Facility (FFTF) back to the Assistant Secretary for Nuclear Energy (NE) under the Nuclear Energy R&D Budget. This Facility is still under the purview of NE and was included under the EM budget by Congress in the FY 1991 Appropriations Act on the assumption that FFTF would be shut down and go to a controlled shutdown status, layup or mothballing. The decrease for FFTF is offset by several increases, including an increase of about $25 million on the West Valley Demonstration Project which will be used to procure and place the mechanical/electrical, vitrification construction contract in the 2nd quarter of FY 1992. An increase of about $1.3 million for low level waste will be used to begin design of a dedicated greater-than-class-C storage facility. The budget also includes $7.8 million for program support to establish funding support for policy-development and strategic-planning in the non-defense account. An additional increase of about $21 million for waste management operations (including treatment, storage, disposal, and continuity of operations) includes upgrades at four major Laboratories (Argonne National Laboratory, Brookhaven National Laboratory, Oak Ridge National Laboratory and Pacific Northwest Laboratory) in both operations and construction, based on deficiencies found by Tiger Team assessments, to ensure safe and efficient basic-waste management operations. Other activities are required to support tasks necessary to comply with RCRA-based waste management regulations, meet required milestones established by formal agreements with our regulators, and retain the integrity of our extensive operations. This budget includes operations related to treatment, storage, transport and disposal of radioactive, hazardous, mixed or sanitary waste while complying with all applicable Federal, State and local regulations and DOE orders. Table 2 summarizes the Waste Management FY 1992 budget request.

TABLE 2.—FISCAL YEAR 1992 BUDGET REQUEST—WASTE MANAGEMENT FUNDING SUMMARY

[In thousands of dollars]

	Fiscal year—	
	1991	1992
AEDA (DEFENSE)		
Activity:		
Continuity of operations	451,459	540,373
Waste isolation pilot plant	123,808	182,018
Defense waste processing facility	148,113	165,837
Hanford waste vitrification plant	103,805	61,289
Treatment, storage, disposal	657,415	1,189,499
Waste minimization	9,201	13,394
Program support	76,182	51,357
Compliance oversight	755	19,266
Landlord	....	86,696
Program direction	....	67,747
Total, waste management—Defense	1,570,738	2,377,476
ESR&D (NONDEFENSE)		
Subactivity:		
Continuity of operations	12,753	23,053
Treatment, storage, disposal	13,275	23,013
Program support	....	7,836
Waste minimization	267	1,047
Compliance oversight	....	78
Low level waste	7,245	8,500
Fast flux test facility	83,549	....
West Valley demonstration project	79,072	104,000
Total, waste management—nondefense	196,161	167,527

TABLE 2.—FISCAL YEAR 1992 BUDGET REQUEST—WASTE MANAGEMENT FUNDING SUMMARY—Continued

[In thousands of dollars]

	Fiscal year—	
	1991	1992
Total, waste management	1,766,899	2,545,003
Less adjustment for fiscal year 1991 supplemental request		−192,400
Grand total		2,352,603

BASIS FOR MANAGING DOE WASTES

Wastes are managed in a manner that assures protection of the health and safety of the public, DOE and contractor employees, and the environment. DOE is not self regulating in the management of the majority of its waste materials. The Department must comply with environmental statutes that are administered and enforced by EPA and host States. In fact over 80 percent of the waste managed by the Department is regulated by the EPA or the host states. It is the policy of the Department that the generation, treatment, storage, transportation, and/or disposal of radioactive wastes, and the other pollutants or hazardous substances they contain, shall be accomplished in a manner that minimizes waste generation and complies with all applicable Federal, State, and local environmental, safety, and health laws and regulations and DOE requirements.

MIXED WASTE AND LAND DISPOSAL RESTRICTED WASTE

One area that demands intense effort is the proper management of radioactive mixed waste (RMW) (i.e., wastes containing both a hazardous and radioactive component). This is a major problem for the Department of Energy. Even where no release to the environment is involved, requirements found in RCRA have the potential to threaten operations essential to production of defense nuclear materials and weapons production plants, due to the lack of treatment capability. Under the Land Disposal Restrictions, hazardous wastes may not be stored for more than one year (nor disposed of) unless first treated (40 CFR 268.50). Due to the special concerns and technological challenges presented by RMW treatments, adequate National capacity to properly treat large volumes of these wastes is several years away.

DOE provided EPA a comprehensive description of all DOE RMW that are now subject to LDR under RCRA by submitting the National Report on Prohibited Waste and Treatment Options on January 17, 1990. Prior to this National Report, we gave EPA a table of all RMW and indicated the lack of available treatment facilities to treat these wastes. There is a need for considerable technical understanding of this issue by all parties, i.e., the generator and the regulators. As is indicated earlier, DOE is working with the USEPA and State regulators to develop that understanding.

DEFENSE WASTE MANAGEMENT PROGRAM

WASTE ISOLATION PILOT PLANT

The FY 1992 request for activities at WIPP is $182 million, an increase of $58.2 million over FY 1991. The funding will support an increased level of activity at WIPP in Test Phase which is scheduled to start in the latter part of FY 1991. Since 1987 there have been significant changes to the scope and contents of the Test Phase activities. These changes are the result of two major influences: new scientific and technical information and expanding and changing regulatory requirements. For example, new data on repository permeability and the consequences of gas pressure in the repository have resulted in the need for expanded tests on gas generation and potential engineered alternatives. Also, the application of RCRA requirements to radioactive mixed waste has led to a need for additional waste characterization data and testing. For example, the need to select "representative" waste for the test program and characterize it using Environmental Protection Agency's accepted protocols has had a major impact on the WIPP program. New program experiments conducted in the test phase are designed to evaluate waste performance in varying conditions of waste disposal which will provide critical data needed to determine compliance with EPA's disposal standard (40 CFR 191) and RCRA. Major activities include bin and alcove radioactive tests, as well as an aggressive program to evaluate possible engineering modifications to address disposal room performance. The FY 1992 budget also includes impact assistance payments to the host state. On January 22, 1991, the Secretary issued Revision 6 of his Draft Decision Plan which identifies the critical path of integrated, open prerequisites at WIPP and the Idaho National Engineering Laboratory. As in the past, the Department issued the Decision Plan for comments from the Governors and Congressional delegations of Colorado, Idaho, New Mexico, Nevada, South Carolina, Tennessee and Washington, as well as from the New Mexico Environmental Evaluation Group (EEG), Western Governors Association, Southern States Energy Board, Environmental Protection Agency (EPA), Departments of Defense and Interior, Office of Management and Budget, the Secretary's Independent Advisory Committee on Nuclear Facility Safety (ACNFS), and other interested parties.

The Secretary announced with the release of Revision 6 of the WIPP Decision Plan that the base WIPP facility will be completed by the end of February 1991. In parallel, the Department is readying equipment, procedures and personnel for receipt of waste at WIPP as well as at Idaho and Rocky Flats for preparation and shipment of waste for the Test Phase. These Test Phase-related activities will be subjected to comprehensive readiness reviews that require resolution of comments from multiple reviewers prior to the Test Phase start-up. Based on the status of open and completed prerequisites, the Secretary announced that WIPP could be ready to begin the Test Phase in the June/July 1991 timeframe.

The completion of the base WIPP facility marks a significant accomplishment resulting from years of technical analysis, environmental and safety evaluations, and extensive public review. The Department has completed a Final Safety Analysis Report (FSAR), a Final Supplemental Environmental Impact Statement (SEIS) and Record of Decision, a Performance Assessment Test Plan, a Retrievability Plan, emergency response training to States along selected transportation routes to WIPP, a demonstration of the Department's response to a simulated transportation accident, emergency preparedness response, and many other key operational readiness activities, such as the completion of critical as-built drawings.

On January 22, 1991, the Department of the Interior (DOI) approved a modified Public Land Order (PLO), which translates into an administrative land withdrawal, that allows the Department to proceed with the Test Phase at WIPP. DOI's modified Public Land Order places two conditions on DOE: 1) that the Department obtain all required environmental permits' before waste receipt, and 2) that the Department restrict the amount of waste in WIPP to that amount that can be feasibly removed, if necessary. The Department still prefers legislative land withdrawal and is working with Congress on appropriate legislation.

As with previous revisions to the Decision Plan, the June/July 1991 timeframe is not an opening date for WIPP; it is the projected completion date for all prerequisites for waste receipt. Some of these prerequisites are outside the Department's control and could significantly affect the WIPP readiness schedule. For example, the No-Migration Determination, which was issued by the Environmental Protection Agency (EPA) in October 1990, and New Mexico requirements for waste characterization under RCRA, will require new tests over the performance assessment period. The Department continues to evaluate the impacts of these new requirements. Since the initial draft of the Decision Plan was issued In October 1989, DOE has made the commitment to extensive external involvement in the WIPP project. Because of this commitment, DOE expects that the extent of external reviews and changes in external regulatory requirements will continue to be areas of uncertainty which may require additional changes to the Decision Plan. In addition, since the performance assessment is exploring new areas of science and metrology, additional modification and additions to the performance tests would be anticipated.

ROCKY FLATS PLANT

We have also been deeply involved with the mixed Transuranic (TRU) waste storage situation at the Rocky Flats Plant, located near Denver, Colorado. The delays attendant to the WIPP required total evaluation of the Waste Management for the Rocky Flats waste. We are investigating three storage options: storage at one or more DOE sites, storage at a Department of Defense facility, and storage at a commercial site. We have considered eight DOE sites in seven States for such storage (i.e., the Rocky Flats Plant, WIPP, the Los Alamos National Laboratory, the Idaho National Engineering Laboratory, the Oak Ridge National Laboratory, the Nevada Test Site, the Savannah River Site, and the Hanford site).

In addition to alternate storage options, waste minimization and volume reduction initiatives have been implemented and have been effective at the Rocky Flats Plant, allowing extension of the date when the permitted storage limit would be reached and either plant operations must be curtailed or offsite shipment would have to be initiated. We have been actively seeking the advice and counsel of all States potentially involved and have kept them abreast of our plans and progress. Secretary Watkins is committed to keeping the responsible State officials involved and informed.

HIGH LEVEL WASTE VITRIFICATION

We continue to make progress in our plan to transition from tank storage of high-level waste at our Savannah River and Hanford sites, for which we have responsibility. We are transitioning from tank storage to more secure and environmentally acceptable storage of a glass waste form encapsulated in stainless steel canisters. The processes proposed for these two vitrification plants (as well as the West Valley Demonstration Project found in the Non-Defense section) are based on the same technology. Also, this technology is being used at waste processing plants in Germany, France, Japan, and the United Kingdom. DOE will take full advantage of the applicable technology development at these facilities. An active technology exchange program has been established among three vitrification plants for this purpose. Storage of the vitrified borosilicate high-level waste form will be provided onsite until a Federal geologic repository is ready to receive defense waste.

The Savannah River and West Valley vitrification plants will be operational in the mid-1990's to be followed by the Hanford plant at the turn of the century. The vitrification plants are being designed and constructed so that they will be in full compliance with Federal, State, regional, and local environmental policies for gaseous, liquid, and solid emissions. Requirements for all applicable environmental laws and regulations will be met.

DEFENSE WASTE PROCESSING FACILITY

The nation's first full scale plant for solidifying high level radioactive waste, the Defense Waste Processing Facility (DWPF) located at the Savannah River Site, is essentially complete. DWPF commenced non-radioactive (cold) testing on September 30, 1990. In FY 1992, preoperational activities will continue in support of the anticipated November 1992 vitrification facility hot startup. Data from the cold runs will provide necessary information on waste form qualification, quality assurance, and personnel training. Cold runs are scheduled for 19 months. Cold runs will be followed by review and approval for hot startup estimated to last 6 months.

There are approximately 34 million gallons of radioactive waste stored in underground tanks at the Savannah River Site. Waste pretreatment activities carried out in the tank farms will separate the waste into a high activity fraction and a low activity fraction. The high activity fraction will contain 99.99 percent of the radionuclides but consist of less than 10 percent of the original volume of waste. The high activity fraction will be vitrified at the DWPF. The facility is designed to produce 410 glass-filled canisters annually, each of them containing approximately 165 gallons of vitrified waste. It is estimated that once the facility is fully operational, it will take 16 years to process the backlog of accumulated wastes. Interim storage of the vitrified high-level waste at the Savannah River Site will be in a glass waste storage building. The storage building can hold 2,300 waste- filled canisters, representing approximately 5 years of DWPF production. Eventually the canisters of glass will be transported to a Federal geologic repository.

Two additional projects provide direct support to the DWPF, the Saltstone Manufacturing and Waste Disposal Facility (SMWF) and the Consolidated Incinerator Facility (CIF). The SMWF will treat and process the low-level radioactive salt solution fraction from the DWPF process. The material will be stabilized in a concrete matrix and, stored onsite in above-ground concrete vaults. The SMWF commenced operation in June 1990; in FY 1992, $14 million is requested for operations. The proposed CIF is currently designed to incinerate liquid and solid hazardous mixed waste materials. The high temperature in the CIF rotary kiln will destroy, the volatile hazardous organic waste stream, primarily benzene, generated by the DWPF vitrification process. Radionuclides are immobilized in a concrete matrix for onsite low-level storage. The CIF has completed hazard and safety reviews and a Safety Analysis Report (SAR) is being prepared. The CIF has a total estimated cost of $42 million and is scheduled to be completed in the first quarter of FY 1994.

HANFORD WASTE VITRIFICATION PROJECT

Hanford stores approximately 20 million gallons of radioactive waste in double-shell tanks. Similar to the DWPF, the high-activity fraction will be vitrified. The

Hanford Waste Vitrification Project (HWVP) will be located southeast of the B-Plant. The waste will be pretreated in the B-Plant, resulting in two waste streams. One stream is sludge resulting from concentrating the stored waste. This sludge will contain the bulk of the fission products and TRU elements. The small volume of sludge will be sent to the HWVP for treatment. As with the product from the DWPF, the canisters of glass will be stored onsite for eventual disposal at a Federal geologic repository. The other waste stream, much larger in volume, is the decontaminated liquid from the concentrating process. This large volume of decontaminated liquid waste will be solidified and disposed of as low level waste.

The FY 1992 request for HWVP funding is $61.3 million a decrease of $42.5 million from the funding provided in FY 1991. Based on the current projection for funding, the total estimated cost for construction is about $1.2 billion. Construction is tentatively scheduled to start in the fourth quarter of FY 1993 and is scheduled to be completed in FY 2000. This would support the start of hot operation in FY 2002.

This represents a two-year delay from the previous schedule. A delay will assure that the plant will not stand idle for extended periods because of a lack of feed and will minimize the likelihood that retrofits will be required to incorporate lessons learned from the Defense Waste Processing Facility (DWPF). HWVP is but one element in the system required for vitrification of Hanford defense waste. Other elements will retrieve the waste from the tanks where it is now stored and convert it into feeds acceptable for vitrification and disposal offsite in a Federal geologic repository or grouting and disposal onsite as low level waste. A comprehensive systems engineering risk assessment is being conducted to evaluate the plans, programs and assumptions for the various system elements. Preliminary reviews indicate that:

—The use of the 45 year-old B-Plant for waste pretreatment may not be feasible because the facility will not meet the requirements of the Resource Conservation and Recovery Act (RCRA) and because some process streams may not be compatible with the stainless steel piping in the plant. It may prove preferable to build a new feed pretreatment facility, in which case the delay might be more than two years.

—More time may be needed to characterize the wastes in the tanks to better define the waste pretreatment requirements and to gain improved understanding of the implications of the hydrogen generation observed in some of the double-shell tanks on waste pretreatment.

—It would be prudent to obtain operating experience with vitrification technology in the DWPF before starting construction of HWVP.

—The plans and programs for pretreatment technology development do not match the original schedule for HWVP. A 1 to 2 year delay in HWVP processing would occur after the first of the four planned campaigns because pretreated feed would not be available.

The delay affects milestones included in the Hanford Federal Facility Agreement and Consent Order (Commonly referred to as the Tri-Party Agreement). This agreement between the Department of Energy, State of Washington, and the Environmental Protection Agency establishes the baseline plan and schedule for cleanup of nuclear weapons wastes at Hanford. It includes a formal change process which will be initiated as soon as the ongoing studies, assessments, and evaluations are complete. DOE expects to follow the provisions of the Agreement and request an extension of the original schedule. In the interim, the State has been informed of problems with the HWVP schedule through Congressional testimony on July 31, 1990, by letter notification to the Washington State Department of Ecology on October 2, 1990, October 31, 1990, and December 12, 1990, and through a technical information briefing to the Hanford Waste Systems Risk Assessment Advisory Board, which includes representatives from the state and Region 10 of the EPA, on January 10, 1991.

IDAHO HIGH LEVEL WASTE TANK FARM

Liquid radioactive wastes are produced from the reprocessing of spent fuel at the Idaho Chemical Processing Plant (ICPP). A major portion of this recoverable irradiated fuel is from Naval propulsion reactors. The liquid wastes are stored temporarily in underground storage tanks prior to calcination in the New Waste Calcining Facility. This calcined waste, which is highly radioactive, is also classified as hazardous waste under current RCRA regulations.

The high-level radioactive waste tank farm currently consists of eleven tanks, each has a capacity of 300,000 gallons. Evaluation of the existing high-level tank and vault systems has confirmed five tanks need to be replaced to meet DOE and current environmental regulations. The existing tanks, although they have not leaked, lack adequate secondary containment and concerns have been raised regarding their seismic stability. We proposed to replace five of the existing tanks with four new tanks, which will be designed and built to meet RCRA regulations for hazardous waste tank systems, as well as applicable seismic and operational requirements. These four tanks will have 500,000 gallons of capacity each. A follow-on project, currently scheduled for FY 1995, will replace the remaining six tanks.

Each new tank will be constructed of stainless steel, and have a secondary containment meeting all applicable regulations and seismic requirements. The secondary containment will have a sump with a system for detecting collected liquids. The vault will provide required radiation shielding. A vault ventilation system using blowers and high-efficiency particulate air (HEPA) filters will be provided to enhance early leak detection capability.

Work has commenced on NEPA documentation for this project. It is now anticipated that an EA will be required. Construction of the first four tanks will start in the fourth quarter of FY 1992 and be completed in the fourth quarter of FY 1998 at a total estimated cost of $270 million. Given the magnitude of this project, we plan to request a detailed verification of our total cost estimate by the Corps of Engineers or by another independent agency.

COMPLIANCE AGREEMENTS

We continue to negotiate formal compliance agreements with the regulatory authorities who have jurisdiction over portions of our waste management operations programs. We have executed agreements at several of our sites with the Federal EPA and the cognizant state authority. We have multi-party agreements with the host State and EPA Region at several of our sites and have signed, or are pursuing, similar agreements at Idaho, Savannah River, Oak Ridge, Rocky Flats, and several other sites. In most cases, these agreements lay out a schedule to allow DOE to operate in regulatory compliance. Each agreement addresses remediation of problems at a specific site. Problems at all sites need to be ranked in priority order for funding and other considerations. Increases in requirements, beyond those contemplated at the time the agreements were negotiated, are a major factor in the budget increases. We will continue to negotiate formal agreements at all sites on outstanding compliance issues requiring long-term implementation. To operate without an agreement places facilities/plants in jeopardy of enforcement actions. These may be administrative (i.e., notice of noncompliance) or criminal in nature (i.e., EPA may refer a case to the Department of Justice seeking criminal prosecution). The milestones specified in these agreements should be reviewed semiannually to insure factoring in latest data necessary to bring us into compliance. They are a major factor in the growth of our budget request.

Many of the construction projects requested in this FY 1992 budget are directly related to these agreements and our efforts to comply with the emerging regulations. As stated earlier, in Idaho, the existing high-level waste tanks cannot meet the RCRA regulations for hazardous waste tank systems as well as the applicable seismic requirements. These will be replaced by new tanks which will meet all requirements. Construction of the Waste Receiving and Processing Facility at Hanford is addressed in the Hanford Tri-Party Agreement. The facility will assay and segregate TRU waste and low level waste. It is estimated that 50 percent (by volume) of existing stored drum waste will be assayed as low level waste. The facility will provide radioactive waste receiving, assay, limited treatment, temporary storage of TRU waste for eventual disposal at WIPP, and repackaging as necessary, and onsite low level waste disposal. In general, strong emphasis will be placed on characterizing all DOE waste streams so that the development and planning of treatment and disposal facilities will be adequate to meet regulatory-driven requirements.

WASTE MINIMIZATION

One of my key goals is to prevent or reduce the generation of wastes that result from DOE operations. My office has the responsibility for program policy, guidance and coordination of DOE waste minimization activities. This includes coordination of these Departmental activities with other Federal agencies, State and private sector organizations, and evaluation and reporting on DOE progress in minimizing future wastes. Our responsibility is implemented through those DOE programs that generate waste, including energy supply research and development programs and defense programs. In FY 1990, DOE issued a waste reduction policy statement and guidance for development of waste minimization programs and plans. Waste minimization plans were submitted by our sites and facilities in May of 1990. Recommendations for improvement of these programs were provided to our field offices and facility managers. Workshops have been held to help management and technical staff in our operating facilities improve their efforts to reduce waste generation at the source and to recycle useful materials. A primary focus of our efforts in FY 1991 will be to establish more definitive and challenging goals for minimizing waste at each facility. In FY 1992, the DOE waste minimization program will emphasize process changes, materials substitutions, recycling and recovery of useful materials from potential waste streams, and treatment of wastes to reduce the toxicity and mobility of pollutants upon disposal in order to meet our established goals.

PROGRAM DIRECTION

This activity supports 650 waste management personnel at Headquarters and Field Offices and covers federal salaries, benefits, travel, and contractual services. In prior years, it was managed and funded under the program direction activity within the Office of Environmental Restoration and Waste Management. A separate waste management program direction activity was established this year in order to provide additional visibility and line management accountability for the resources required to conduct the waste management programs.

NON-DEFENSE WASTE MANAGEMENT PROGRAM

WEST VALLEY DEMONSTRATION PROJECT

The FY 1992 request for West Valley is $104 million, an increase of about $25 million over FY 1991. This increase provides placement of the last major construction package (mechanical/electrical) for the vitrification facility including hardware procurement and construction management. The increase also provides additional funding required for the Environmental Impact Statement for Phase II of the West Valley Project as well as funds required to achieve full compliance with Department safety initiatives.

This project, located near West Valley, New York, includes efforts that will provide an integrated production-scale development and demonstration project for solidifying approximately 600,000 gallons of high-level nuclear wastes. It is anticipated that at least 300 canisters of vitrified high-level waste will be produced during the 30 month waste vitrification campaign. The project, located on a site previously used for reprocessing spent nuclear fuel for commercial purposes, is currently using existing facilities to the maximum extent possible.

The 600,000 gallons of high-level liquid waste is contained in underground storage tanks. The waste is comprised of a supernatant liquid above a sludge layer. The supernatant represents approximately 90 percent of the volume and 50 percent of the radioactivity of the stored high-level waste. It is expected that supernatant processing will be completed in late CY 1991 or early CY 1992. The treatment process entails transferring the majority of radioactive constituents to an ion-exchange resin, that in turn, will be blended with the sludge and glass formers to produce canisters of vitrified high-level waste.

The low-level liquid waste stream resulting from this treatment system is being immobilized in cement and stored at the site in a shielded cell. As of the end of CY 1990 about 80 percent of the supernatant volume has been processed. To facilitate the vitrification process, the sludge must be washed to remove certain chemical constituents. Testing of the sludge washing equipment will begin after liquid supernatant waste processing is completed. Construction of the facility to store the vitrified high-level waste canisters on site will also begin during FY 1991.

NATIONAL LOW-LEVEL WASTE PROGRAM

The National Low-Level Waste Program provides assistance to States and compact regions in developing new capacity for the disposal of low-level radioactive waste in accordance with the Low-Level Radioactive Waste Policy Amendments Act of 1985, Public Law 99–240. This legislation assigned individual States the responsibility for the disposal of low-level radioactive waste generated within their borders with the exception of wastes generated as a result of certain Federal activities, primarily DOE low-level waste, and waste from licensed generators that exceeds the NRC limits for Class C low-level waste. Such waste has been designated as greater-than-Class C low-level waste and is generally not acceptable for shallow land disposal. The formation of regional compacts among States to carry out their responsibilities is encouraged by the Act. To date, nine compact regions, incorporating 43 States, have been formed and consented to by the Congress.

Currently 13 new low-level waste disposal facilities are planned by States and compacts as a result of Federal policy established by Public Law 99–240. Three regional compacts (Central, Central-Midwest, and Southwestern) have indicated that they plan to have new disposal facilities operational by the January 1, 1993 milestone. The existing Northwest Compact disposal facility in the State of Washington will continue to operate after 1993.

Although some States and compacts will not have new capacity available for disposal of their low-level waste by January 1, 1993, the Department does not believe it is advisable to revise the fundamental framework for management of the Nation's low-level waste as currently set forth in Federal law. States and compacts retain sufficient flexibility and authority to implement their responsibilities for disposal of their low-level radioactive waste under Federal law in a variety of ways consistent with their individual goals.

We are requesting $8.5 million for the Low-Level Waste Program in FY 1992, an increase of $1.25 million over FY 1991 funding. In addition to continuing to provide assistance to States compacts in meeting their responsibilities under Public Law 99-240, the Department will provide for acceptance of limited quantities of greater-than-Class C low-level waste for storage and eventual disposal. Development of a dedicated storage facility for general acceptance of greater-than-Class C low-level waste by 1997 will continue in FY 1992.

We are working with State representatives on mutual concerns about radioactive waste management. In particular, we are discussing the management of DOE radioactive wastes, including greater-than-Class C, and DOE's role in assisting States with radioactive waste management, including mixed (radioactive and hazardous) low-level wastes. Existing concerns should be resolved with a consensus of the States when these issues are fully addressed.

CORRECTIVE ACTIVITIES

The Corrective Activities Program is aimed at identifying what costs and activities are required to bring our facilities into full compliance with existing regulatory requirements. The goal of the Corrective Activities Program is to bring active and standby facilities at all DOE sites into compliance with all applicable air, water, and solid waste regulatory requirements, and DOE orders.

The primary regulations governing these activities are the Clean Air Act, Clean Water Act, Resource Conservation and Recovery Act, Safe Drinking Water Act, Toxic Substances Control Act, and State and local ordinances. Within Atomic Energy Defense Activities, this program is composed of corrective activities at facilities operated by two major DOE base programs: Environmental Restoration and Waste Management, and Defense Programs. Within Energy Supply Research and Development, this program is composed of activities at facilities operated by Energy Research and Nuclear Energy. Although accounted for in this budget activity, the efforts will be managed by their respective base program.

FISCAL YEAR 1992 BUDGET REQUEST—CORRECTIVE ACTIVITIES FUNDING SUMMARY

[In thousands of dollars]

Subactivity	Fiscal year— 1991	Fiscal year— 1992
AEDA (DEFENSE)		
Environmental restoration and waste management	78,947	32,588
Defense programs	66,490	77,547
Total, corrective activities—defense	145,437	110,135
ESR&D (NONDEFENSE)		
Energy research	19,308	29,281
Nuclear energy	4,087	554
Total, corrective activities, nondefense	23,395	29,835
Total, corrective activities	168,832	139,970
Less adjustment for fiscal year supplemental request		−17,600
Grand total		122,370

The FY budget request for Defense Corrective Activities is $110.1 million a decrease of $35.3 million from appropriated FY 1991 funds. These activities are distributed among the base programs of Environmental Restoration and Waste Management, and Defense Programs. The overall decrease of $35.3 million is due to the transfer of Feed Materials Production Center in Ohio to EM's Office of Environmental Restoration and the fact that some activities formerly funded under Corrective Activities now appear in the Waste Management portion of the budget. Some increases which offset the decrease include funding for initiation of design and construction of facilities at Oak Ridge, Los Alamos, Lawrence Livermore and Rocky Flats sites. These new construction efforts will bring facilities into compliance with applicable State, local, and Federal requirements.

The FY 1992 budget request for Non-Defense Corrective Activities is $29.8 million, which is an increase of $6.4 million over FY 1991. These activities are distributed among the Energy Research and Nuclear Energy base programs.

The increase of approximately $10 million for the Energy Research Program is for conducting risk assessments at Los Alamos National Laboratory and installation of low-level waste lines at the Oak Ridge National Laboratory. The Nuclear Energy Program is funded at $0.6 million and includes activities at various facilities, such as the Energy Technology Engineering Center in California. This activity provides for design, procurement, and installation of modifications needed to bring facilities into compliance.

ENVIRONMENTAL RESTORATION

The objectives of the Environmental Restoration Program are to perform remedial action and decontamination and decommissioning at contaminated DOE and legislatively authorized non-government facilities and sites; conduct assessments and characterization of DOE sites to determine if there is a potential for radioactive and hazardous waste releases; and to protect human health and environment. The goal of the Environmental Restoration Program is the cleanup of contaminated DOE and legislatively authorized sites within 30 years, as stated in the Environmental Restoration and Waste Management Five-Year Plan.

As discussed in the overview, the FY 1992 budget request is being proposed under two separate appropriations: Energy Supply Research and Development (ESR&D) and Atomic Energy Defense Activities (AEDA). The Department is also submitting a Supplemental request in the Atomic Energy Defense Activities appropriation for FY 1991. The Environmental Restoration portion of the Supplemental request is $100.0 million. The Supplemental request in concert with the FY 1992 budget request of $1,400.5 million will provide for a total program of $1,500.5 million ($1,174.4 million for AEDA and $326.1 million for ESR&D activities). That is an increase over the FY 1991 appropriated level of $524.6 million or 54 percent.

The 30-year cleanup goal supports the Department's policy of compliance with the letter and spirit of applicable Federal, State and local health, safety, and environmental statutes. Successful execution of this program is a key part of the Department's commitment to continue to protect public health and safety and to assure a safe and clean environment in connection with its activities. The major Environmental Restoration activities are: (1) the Facilities and Sites activity, under both the Defense and Non-Defense accounts, which provides for the safe management and cleanup of contaminated sites and includes characterization, remedial action, decontamination and decommissioning, and closure activities at 30 major DOE installations throughout the United States; (2) the Formerly Utilized Sites Remedial Action Project (FUSRAP) which currently includes 34 sites, 29 former Manhattan Engineering District (MED) or Atomic Energy Commission (AEC) sites and 5 sites added by Congress; (3) the Uranium Mill Tailings Remedial Action Project (UMTRAP) which provides for cleanup of 24 inactive uranium mill tailings sites, which provided uranium for the MED and AEC, and several thousand associated vicinity properties; and (4) the Uranium Mill Tailings Groundwater Restoration Project which will restore, as necessary, groundwater associated with the 24 inactive uranium mill tailings sites. The last three projects are currently under the Non-Defense Appropriation account.

The requested funding for the Environmental Restoration Program is distributed among the program elements in the following table:

[In thousands of dollars]

Subactivity	Fiscal year—	
	1991 appropriation	1992 request
Defense: Facilities and sites	764,141	1,174.392
Nondefense:		
Facilities and sites	62,610	135,233
Formerly utilized sites remedial action project	29,200	49,000
Uranium mill tailings remedial action project	119,000	139,900
Uranium mill tailings groundwater restoration	990	2,000
Total, env. restoration (nondefense)	211,800	326,133
Total, environmental restoration	975,941	1,500,525
Less adjustment for fiscal year 1991 supplemental	....	−100,000
Grand total	....	1,400,525

Major Environmental Restoration (ER) accomplishments in FY 1990 and early FY 1991 include the transfer of responsibility for the Feed Materials Production Center (FMPC) in Ohio from Defense Programs and total consolidation of funding and program efforts under ER. At the Savannah River site, we have completed 2 major closures; at the Oak Ridge Reservation, 4 closures were completed, including the 5–3 ponds at the Y–12 facility. At the Weldon Spring site in Missouri, we completed all the engineering and environmental reports required to enable the start of bulk waste removal at the site. At the Los Alamos National Laboratory in New Mexico, decommissioning was completed on the Water Boiler Reactor and the Ultra-High Temperature Reactor Experiment. At the Kansas City Plant in Missouri, groundwater treatment was initiated in the Northwest and TCE still areas. At the Trudell Auto Repair Shop in California, a site on the EPA National Priority List, remedial actions were conducted on the waste oil areas and the septic tank systems.

Under UMTRAP, remedial actions were completed in FY 1990 at Green River, Utah; Riverton, Wyoming; and Lakeview, Oregon, bringing the total completed sites to 8 of the 24 authorized for cleanup under this project. Waste sampling efforts for the Single-Shell Tanks at Hanford, Washington continued with 15 core samples being taken from 2 tanks. Also at Hanford, installation of the by- pass system as part of the B Pond closure was completed and the closure/post closure work plan submitted along with 112 operable work plans to the regulators. At the Idaho site, abandonment of the Idaho Chemical Processing Plant Injection well was completed. At the Lawrence Livermore National Laboratory (LLNL) in California, pilot groundwater treatment activities were performed with 25 million gallons of water being treated by the end of FY 1990. Also at LLNL the final Remedial Investigation report and draft Feasibility Study for the entire site was submitted to the regulators. For the LLNL Site 300, an Interagency Agreement was negotiated and signed in October 1990.

As discussed previously, activities are budgeted under two appropriations with some sites supported by both accounts due to the mix of past program usage. Jointly-funded decommissioning efforts include activities at the Mound Laboratory in Ohio and at the Pacific Northwest Laboratories in Washington; where prior research efforts supported both Defense and Non-Defense programs. Facilities at the Oak Ridge reservation and the Idaho National Engineering Laboratory, sites under the San Francisco Operations Office, and sites under the Chicago Operations Office also have cleanup efforts supported by both appropriations accounts. First, I'd like to discuss the Atomic Energy Defense Activities. The FY 1992 Request for Facilities and Sites (Defense) is $1,174.4 million, which is an increase of $410.3 million above the FY 1991 Appropriation.

FACILITIES AND SITES (DEFENSE)

The Facilities and Sites activity conducts remedial actions and decontamination and decommissioning projects to reduce and remove the potential risks to the environment and to human health and safety resulting from past defense-related Department activities.

The remedial action requirements are derived principally from the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the Resource Conservation and Recovery Act of 1976 (RCRA), as amended. The program consists primarily of activities related to remediation of inactive waste disposal sites, uncontrolled release sites, and underground storage tanks. The scope, schedules and cleanup standards for these activities are negotiated with the Environmental Protection Agency (EPA) and the States and are the subject of RCRA permits, Consent Orders and Compliance Agreements, and CERCLA Federal Facility Agreements. Currently in FY 1991, over 200 assessments, 29 interim remedial actions, 32 cleanups, and 36 closures are in progress at the various sites/facilities under the responsibility of the Environmental Restoration Program.

There are several areas of intense effort regarding completion of cleanups under RCRA corrective action requirements and acceleration of assessment activities under both RCRA and CERCLA. These activities, described below, are responses attributable to the Department's interaction with State and EPA regulators in negotiations that have put or are about to put into place Interagency Agreements describing DOE and regulator commitments in meeting CERCLA and RCRA requirements. In addition, Agreements in Principle are being negotiated on a voluntary basis with all the States that host Departmental facilities. The model for such agreements is the Agreement in Principle signed between the Department and the State of Colorado in June 1989. These agreements provide for funding for the State and formalization of the Department's commitment to increased oversight and monitoring of DOE's activities by the State.

The Rocky Flats Plant is in close proximity to the drinking water supply for the cities of Broomfield, Northglenn, Thornton, Westminster and Federal Heights. While there is no imminent threat of contamination, DOE has agreed to support a project that will offer complete protection to area drinking water supplies. This project will give the citizens of the neighboring cities confidence in their water supply. The project will be a joint effort between DOE and the cities with the objective of protecting Standley Lake from plant run-off and to replace the Great western Reservoir with a new water supply. The Department is planning to conduct interim actions this year at the same time the NEPA process is ongoing. These actions may include studies for the Standley Lake effort and obtaining water rights for Carter Lake.

Other projects at the Rocky Flats Plant include the construction of an underground drainage system to intercept and contain all contaminated groundwater flowing from the 881 Hillside area. The contaminated groundwater will then be pumped to an onsite treatment facility to remove organic compounds, metals and radionuclides. At the 903 Pad Areas, DOE completed the evaluation of technologies and initiated the design and procurement of equipment. The preferred alternative is chemical precipitation with cross-flow membrane filtration for suspended solids, radionuclides, and metals removal followed by granular activated carbon adsorption for removal of volatile organic compounds. DOE expects to start up a scale treatability unit by March 1991. For the solar ponds, the Department is competitively selecting a firm to participate in cleanup of five solar evaporation ponds used to store mixed radioactive/hazardous wastes. About 500,000 to 750,000 gallons of sludge from the ponds are to be solidified with cement to form "pondcrete". This project is scheduled to start in the spring of 1991 per the Agreement in Principle with the State of Colorado.

At the Pinellas Plant in Florida and the Sandia National Laboratories at Livermore, California, remedial actions are underway or nearly complete. Extensive characterization and assessment efforts, under RCRA agreements and permits, are being conducted at the Los Alamos National Laboratory (LANL) in New Mexico, the Pantex Plant in Texas, the Mound Plant in Ohio, and the Kansas City Plant (KCP) in Missouri. Sandia National Laboratories in Albuquerque, New Mexico is proceeding with characterization, assessment and interim remedial actions under the New Mexico water Quality Control Commission Regulations and an expected 1991 Hazardous and Solid Waste Amendments (HSWA) Act permit, respectively. DOE is funding its share of the cleanup for the South Valley Site in Albuquerque, New Mexico, which is on EPA's National Priority List and for which DOE is one of several potentially responsible parties.

At the Idaho National Engineering Laboratory (INEL), remedial activities will be performed in accordance with the pending Interagency Agreement (IAG) between DOE, EPA and the State of Idaho. These remedial activities include characterization and cleanup of operable units which are grouped into waste Area Groupings (WAG's). In FY 1991 and 1992, the principal activities will be performed at WAG's for the Test Area North, Test Reactor Area, Idaho

Processing Plant, Central Facilities Area, Power Burst Facility/Auxiliary Reactor Area, and the most complicated WAG, the Radioactive Waste Management Complex (RWMC), which has 14 operable units. The FY 1992 budget request for INEL environmental restoration activities is $55 million, of which $14.8 million is for the RWMC. Preliminary scoping activities for all WAGs will be completed as specified in the IAG. A draft landfill Statement of Work and an injection well/drinking water work plan will be completed. Draft Record's of Decision for interim actions at the Warm Waste, Chemical, Motor Pool, and Evaporation Ponds and Vapor Vacuum Extraction system will be prepared and submitted to the regulators. Design and Implementation of Chemical and Warm Waste Pond sediments remediation systems will be conducted and PAD A drum removal at the RWMC will continue. Vadose zone data at the RWMC will be evaluated for radionuclide contamination. Cleanup of PCB releases and asbestos will be completed at the ICPP and interim action for removal of mixed hazardous radioactive waste at the ICPP sewage treatment plant will begin.

The Grand Junction Projects Office Remedial Action Project (GJPORAP), located in Grand Junction, Colorado, involves the removal of approximately 140,000 cubic yards of radioactive mill tailings left over from the processing of uranium ore, as well as the decontamination of several buildings. These activities are being conducted in accordance with the determination of a Remedial Investigation Feasibility Study-Environmental Assessment. The Record of Decision for this project, which includes a Finding of No Significant Impact, was issued in April 1990. Physical removal of the mill tailings began in FY 1991 and is expected to be completed by September 1992. We are pursuing Agreements in Principle (AIP) with states where nuclear explosives were detonated in the past. An AIP was signed with Nevada in 1990. Plans are to reach agreements with Mississippi and New Mexico in 1992 and Colorado and Alaska in 1993. Follow-on actions are also being initiated at the Tatum Dome Site near Hattisburg, Mississippi. Five closure plans for inactive waste disposal facilities have been submitted to the State of Nevada for approval.

An extensive groundwater characterization program is being implemented at the 1350 square mile Nevada Test Site (NTS). Approximately 100 wells will be drilled at the NTS. The program was originally scheduled to take 10 years but the State of Nevada and DOE Tiger Team assessments suggest a need to shorten the time allotted for drilling the wells and the Department is aggressively pursuing that objective.

Responsibility for the Feed Materials Production Center (FMPC) in Ohio was transferred on October 1, 1990, from the Office of Defense Programs to the Office of Environmental Restoration and Waste Management. Production operations were discontinued in July 1989, and the focus at FMPC is now entirely on cleanup. Total funding for all site cleanup activities for the FMPC are consolidated under the Office of Environmental Restoration effective with the FY 1992 budget submittal, including efforts formerly supported under the EM Office of Waste Management.

Removal actions that have been accomplished include removal of nine underground storage tanks, and movement of exposed waste in Waste Pit 6 to mitigate dispersion of the material. The movement of the Waste Pit 6 material reduced the calculated off-site radiation exposure from FMPC significantly. Other near-term removal actions, which will be completed in calendar year 1991, include removal of contaminated water under buildings, construction of trenches and dikes to collect and treat contaminated storm water runoff in the waste pit area, and control of migration of a plume of contaminated groundwater off site.

Retraining of the FMPC work force to meet the requirements of the FMPC's current waste management and environmental restoration mission began in December 1988, as the need for uranium production declined and the concerns related to environmental compliance escalated. Major new education and retraining initiatives have begun, including the seven-week DOE/Westinghouse School for Environmental Excellence, the University of Cincinnati/FMPC Education Program, the FMPC Technology Center, and the Center for Retraining Wage Workers and Technicians as Remediation Workers.

Remediation of the FMPC is being conducted in accordance with CERCLA under the terms of the Consent Agreement between the EPA and DOE. The scope of remediation activities at the site has increased since the Consent Agreement was jointly signed. Discussions on the FMPC remediation program scope and schedules are ongoing between DOE and EPA.

At the Oak Ridge Reservation in Tennessee, removal of mercury-contaminated soil from one area of the Y-12 Plant was completed and efforts continued to reduce mercury in plant effluents in FY 1990. In FY 1992, the remediation of three major mercury-contaminated sumps will be completed. A Record of Decision for a major landfill site at Y-12 is expected in FY 1991 and remediation of the site is scheduled for FY 1992. At the Oak Ridge Gaseous Diffusion Plant site, repackaging of mixed waste sludge drums will be completed. Assessment and cleanup activities will continue on two mixed waste burial grounds and underground tanks at the Oak Ridge National Laboratory.

At Hanford, characterization activities are being conducted for the 149 Single Shell Tanks (SST's) containing high-level waste and at a large number of other Hanford operable units. Remedial activities will be conducted under RCRA and CERCLA including assessments, characterization, interim actions, and cleanup actions in accordance with the schedules and milestones established in the Tri-Party Agreement (TPA) with EPA and the State of Washington. Characterization and assessment activities for the SST's will include sample and analysis of 20 core samples from 10 tanks in FY 1991 and 10 tanks in FY 1992, in accordance with the TPA. Also in compliance with the TPA, interim stabilization will be performed on 9 SST's in FY 1991 and 9 additional SST's in FY 1992. In addition, a systems engineering study will be initiated to support a planned Supplemental EIS. In accordance with the Tri-Party Agreement, 20 Operable Unit Work Plans will be prepared and submitted to the regulatory agencies by April 1992. Expedited response actions at 3 sites (the 618–9 Burial Grounds, the 300 Area Process Trench, and the 200W Area Carbon Tetrachloride subsurface plume) began in FY 1991 and will continue, as well as the upgrading of laboratory capabilities needed to support attainment of outyear remediation milestones.

At the Savannah River Site, significant progress has been made in the "closure" of the seepage basins in the F-area and the H-area and at the Mixed Waste Management Facility. Closure consisted of placing clay caps over the contamination to reduce infiltration and the potential for contaminant migration. Additional areas will be assessed and remediated in FY 1991 and FY 1992 and plans for a groundwater remediation system at the site will be developed.

At the Lawrence Livermore National Laboratory (LLNL) Main Site, which is on the National Priorities List (NPL), remediation of soil and groundwater contamination is being conducted in accord with a Federal Facility Agreement (FFA). A Record of Decision for the LLNL Main Site is expected by the end of FY 1991 and full scale cleanup, using pump-and-treat technology, is planned to begin in FY 1992. An FFA is expected to be in place by FY 1992 for LLNL Site 300, which was placed on the NPL in September 1990. Pilot remediation studies for assessment and treatability of hazardous chemical contamination in support of the Remedial Investigation/Feasibility Studies (RI/FS) at Site 300 will continue. Remediation of the Site 300 Western General Services Area hazardous chemical release will begin in March of 1991 and will continue through FY 1992 and beyond until a final Record of Decision (ROD) is issued to complete remediation. The off-site contamination involves low levels (less than 20 ug/L) of volatile organic compounds. Other off-site releases of volatile organic compounds at Site 300, in the Central General Services Area, involving plumes in two aquifers have been detected and will be further investigated during FY 1991 and FY 1992. Remediation of these releases will be accomplished following issuance of the ROD. Closure of the high explosive burn pit will also continue in FY 1991.

COMPLIANCE AGREEMENTS

Much of the FY 1992 budget request for the Facilities and Sites activity is directly related to the enforceable requirements of existing and anticipated agreements. As of January 1990, 21 Departmental sites have been placed on the EPA Superfund National Priorities List. Under the terms of CERCLA, interagency agreements are required and are being negotiated prior to proceeding with major cleanup activities on the sites associated with these installations. Our negotiations with the regulators are moving toward more realistic milestone schedules, based on national limitations in key areas such as key skills, manpower, laboratory analysis capability and effective technology.

We are making significant progress achieving more specific agreements with Federal and State regulators regarding cleanup activities at Department sites. As of the end of FY 1990, the Department had signed 59 interagency agreements, including Federal Facility Agreements, Federal Facility Compliance Agreements, Settlement Agreements, and Consent Orders. Notable among these agreements are the Tri-Party Agreement for the Hanford Site and the three party agreement under CERCLA for the Lawrence Livermore National Laboratory. Since the publication of the Five-Year Plan, the Department has signed a three party agreement on January 22, 1991, with Colorado and EPA Region VIII for the Rocky Flats Plant. This agreement replaces and otherwise brings up to date, requirements for cleanup of the facility described in a three party agreement executed in July 1986. An FFA among the DOE, EPA, and State of Tennessee covering the entire Oak Ridge Reservation was recently signed and is currently out for public review. A Federal Facility Compliance Agreement is currently under negotiation between DOE and EPA-Headquarters to address PCB contamination in the gaseous diffusion plants at the Oak Ridge Reservation, Paducah, and Portsmouth. An Amended Consent Agreement under CERCLA was signed in FY 1990 between EPA and DOE for the FMPC site. The Oak Ridge agreements are in the final stages of review and are expected to be signed in the near future. The Department is also nearing completion of a CERCLA/RCRA agreement with EPA Region IV for the Savannah River Site. Finally, the Department is negotiating with the State of Idaho and EPA Region X for remediation of the Idaho National Engineering Laboratory in Idaho. This agreement will supersede the requirements contained in the Consent Order Compliance Agreement for this facility signed in July 1987.

DECONTAMINATION AND DECOMMISSIONING

A portion of the defense Facilities and Sites activity deals with Decontamination and Decommissioning (D&D) efforts which provide for the safe management and disposition of surplus facilities radioactively contaminated from DOE activities. The decontaminated facilities are to be released for use without radiological restrictions. The D&D program currently includes over 250 projects at 33 sites in 17 States. Many of these facilities require surveillance and maintenance until decommissioning begins. Additional projects are expected to be included in the D&D program as operating facilities become surplus. A major element of the D&D Program is the decommissioning of the Oak Ridge Gaseous Diffusion Plant. Significant surveillance and maintenance efforts are required annually on this facility, which has structures that have a total area of 300 acres. Removal of PCB-contaminated oils is underway and removal of ventilation gaskets will be initiated in FY 1991 under a Federal Facility Compliance Agreement currently being negotiated. Continued cleanup activities and decommissioning planning and cost estimating are planned for FY 1992.

Decommissioning activities ongoing at the Mound Plant, located near Dayton, Ohio, include decontamination of the Plutonium Processing Building (95% complete), the Semi-Works Building (5% complete) and its associated Waste Disposal Building (1% complete), the Special Metallurgical complex and its associated leachfield (30% complete). Decontamination the Semi-Works Cave, the Sanitary Disposal Plant, and underground pipelines to the Waste Disposal Building will be initiated in FY 1992. Additional decommissioning and surveillance activities are being conducted on facilities at the Sandia National Laboratory, Pantex, and the Los Alamos National Laboratory.

The Final Environmental Impact Statement for decommissioning 8 surplus plutonium production reactors at the Hanford Site, near Richland, Washington, is scheduled to be issued in FY 1991. Planning activities and preliminary field work for decommissioning of the reactors is scheduled to begin in FY 1992. This completes the discussion of Defense related cleanup and D&D efforts.

Also included in the FY 1992 budget request is funding to support Headquarters and Field Office staff that provide management and direction of Environmental Restoration activities. This includes providing for salaries, benefits, travel, and contractual services and supplies which are directly related to Environmental Restoration program activities. Staff responsibilities include overall direction and management; budget formulation and execution; long-range planning; monitoring and evaluating contractor performance; and providing the link between the Department and other agencies, public interest groups, and the private sector. These program activities require extensive coordination with other Federal agencies, private property owners, state and local governments, the Indian Nations, and other nations.

FACILITIES AND SITES (NON-DEFENSE)

Under the Energy Supply Research and Development Appropriation account there are also Facilities and Sites cleanup activities being conducted. The FY 1992 request for these activities is $135.2 million, an increase of $72.6 million above the FY 1991 Appropriation.

Included under this activity is the Weldon Spring Remedial Action Project in Missouri, designated a Major Systems Acquisition by DOE, which has an approved FFA with EPA. The project involves the remediation of a 217 acre feed materials plant and a 9-acre quarry which supported Atomic Energy Commission efforts and was also used for ordnance activities by the Department of the Army. Work this year involves construction and operation of contaminated water treatment facilities, removal of bulk wastes from the quarry, demolition of several abandoned production plant buildings, environmental monitoring activities, and issuance of the Record of Decision for final site remediation.

The Department also has an FFA which covers both the Monticello Remedial Action Project for the processing site and the Monticello Vicinity Properties Project in Utah. A CERCLA Record of Decision has been issued for both projects. Currently, 90 of 112 authorized vicinity properties have been remediated. More properties are expected to be surveyed and additional properties are expected to be authorized for cleanup during the next 2 years. For the Monticello Remedial Action Project, remedial design efforts are underway for the former processing site and the first phase of remedial action is scheduled to begin in FY 1992. The Battelle Columbus Laboratory Decommissioning Project in Ohio involves the decontamination and release of 15 buildings radioactively contaminated during work conducted by Battelle under contract to DOE. An Environmental Assessment and a Finding of No Significant Impact were issued for the project and decontamination and release of three buildings was completed in FY 1990. The remaining buildings are under surveillance and maintenance, while planning and characterization activities are being conducted. Completion of D&D and release of three more buildings is planned by the end of FY 1992.

At the Mound Plant, located near Dayton, Ohio, decommissioning of the Research Building was completed in FY 1990. In FY 1992, the Plutonium Processing Building D&D is scheduled to be completed, removal of contaminated soil from the Waste Transfer System hillside will continue, and D&D of the non-defense portion of the Semi-Works Building will be initiated.

At the Paducah Gaseous Diffusion Plant in Kentucky, the Department has completed Phase I, and is currently conducting Phase II, of an investigation to determine the nature and extent of groundwater contamination found in residential wells north of the facility. A Record of Decision for the remediation is expected in FY 1992.

At the Portsmouth Gaseous Diffusion Plant in Ohio, the Department will complete the remediation of four RCRA-regulated land disposal units and investigate approximately 75 solid waste management units (SMUs). Appropriate measures are being implemented to remediate these SMUs and will continue in FY 1992.

In California, the two major sites with D&D activities are the Laboratory for Energy-Related Health Research (LEHR) at the University of California, Davis near Sacramento, and the Santa Susana Field Laboratory (SSFL), located near Los Angeles. LEHR is a 15-acre site with several contaminated buildings, underground waste storage tanks and waste burial trenches. Characterization activities began in FY 1990 and continue in FY 1991. Also in FY 1991, an Environmental Assessment for site remediation will be prepared and the underground tanks will be emptied. D&D of the LEHR buildings will begin in FY 1992. At SSFL, D&D of a small reactor building will be completed in FY 1992 and the hot cell facility will be completed in FY 1993. Soil and groundwater assessment activities at SSFL and Lawrence Berkeley Laboratory will continue in FY 1992.

At Idaho National Engineering Laboratory, decommissioning of the Army Rentry Vehicle Facility and Special Power Excursion Reactor Test facilities will be completed in FY 1991 and decommissioning of the BORAX-V reactor building will be completed in FY 1992. At the Pacific Northwest Laboratory (PNL) in Hanford, Washington, cleanup efforts continue on the 324–B hot cell, a facility needed for other PNL activities. The extent of contamination is estimated at 10^6 curies of radioactivity. Other cleanup and D&D activities in FY 1992 will include efforts at the Argonne National Laboratory in Illinois, the Brookhaven National Laboratory in New York, the Inhalation Toxicology Research Institute in New Mexico, the Oak Ridge National Laboratory in Tennessee, the Los Alamos National Laboratory in New Mexico, and other DOE reservations and remote sites.

FORMERLY UTILIZED SITES REMEDIAL ACTION PROJECT

The Formerly Utilized Sites Remedial Action Project (FUSRAP) conducts remedial action at former nuclear processing facilities which became radioactively contaminated as a result of Manhattan Engineer District or Atomic Energy Commission (MED/AEC) activities and have not been decontaminated sufficiently to meet current public health and safety guidelines. FUSRAP also includes certain contaminated sites specifically assigned to DOE by Congress for remedial action. The FY 1992 budget request is $49.0 million, an increase of $19.8 million above the FY 1991 Appropriation.

To remedy the situation at these contaminated sites, either the contaminated materials will be stabilized in place, with restrictions placed on the use of the site, or the contamination will be removed and disposed of at another location. Remedial action is needed at 29 sites, formerly utilized by the MED/AEC, based on a review of the involvement of these predecessor agencies in previous site activities. The review of sites involved in past activities of MED/AEC was completed in 1987. Additional sites may be added to FUSRAP once followup site radiological surveys are completed.

Congress added four sites to the program when it enacted Public Law 98–50, the FY 1984 Energy and Water Development Appropriations Act, and directed that DOE initiate a decontamination research and development project at these sites as a priority action. With enactment of Public Law 98–360, the FY 1985 Energy and Water Development Appropriations Act, Congress directed DOE to reacquire the former St. Louis Airport Site in Missouri and use it to dispose of waste from cleanup of the nearby Latty Avenue site and vicinity properties. This brings the total number of sites in FUSRAP to 34.

The general approach to FUSRAP projects is to give priority to the cleanup for contaminated residential properties and to store the waste temporarily on each processing and storage site. At the Maywood, New Jersey site, another site on the NPL, the Federal Facility Agreement (FFA) negotiated with the Environmental Protection Agency has been provided to the public for review and will become final in FY 1991. The work plan for the Remedial Investigation/Feasibility Study-Environmental Impact Statement (RI/FS-EIS) was released for public review in FY 1991 and a public scoping meeting for the site EIS was held. Field investigations of all vicinity properties will be completed in FY 1991 and cleanup of some residential properties will be initiated. The initial screening of site alternatives and the RI report will be completed in FY 1992 and the draft RI/FS-EIS will be submitted for review. The FFA for the Wayne, New Jersey site will become effective in FY 1991 and will conclude in FY 1992 with the issuance of the draft FFA for review. All site remedial investigations at Wayne will be completed by the end of FY 1991.

At the Colonie, New York site, efforts are continuing on preparation of the RI/FS-Environmental Assessment (EA) during FY 1991 and will be finalized in FY 1992. The Record of Decision will then be issued to determine the disposition of wastes at this site: Removal of asbestos and equipment from the Colonie, New York site building will be initiated in FY 1992 and building demolition will commence. Field investigations for the Ashland No. 1, Ashland No. 2, and Linde, New York sites will be completed in FY 1991 and the draft RI/FS-EIS issued in FY 1992. Remedial investigations of vicinity properties in Linde, New York will be initiated in FY 1991.

Cleanup of vicinity properties around the St. Louis Airport Site (SLAPS) in Missouri will continue in FY 1991 and FY 1992. A FFA has been finalized with the EPA for SLAPS, the nearby Hazelwood, Missouri site, and the downtown site. Preparation of the RI/FS-EIS documents for these sites will continue in FY 1991 and FY 1992. Remedial investigation at all vicinity properties in the St. Louis area will be completed in FY 1992.

URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT (UMTRAP)

Public Law 95–604, the Uranium Mill Tailings Radiation Control Act of 1978, assigned to DOE the responsibility for conducting remedial action at 24 former uranium ore processing sites and several thousand contaminated vicinity properties. Public Law 100–616, the Uranium Mill Tailings Remedial Action Amendments Act of 1988, extended the Department's authority to perform remedial actions through the end of FY 1994. The FY 1992 budget request for UMTRAP is $139.9 million, an increase of $20.9 million above the FY 1991 Appropriation.

During FY 1990, remedial action was underway at nine processing sites, and an estimated 654 vicinity properties were completed or initiated. Remedial actions were completed at Green River, Utah; Riverton, Wyoming; and Lakeview, Oregon processing sites, bringing the total of completed sites to eight. Other completed sites are at Canonsburg, Pennsylvania; Salt Lake City, Utah; Shiprock, New Mexico; Spook, Wyoming; and Tuba City, Arizona. Surveillance and maintenance efforts continued at these completed sites. The cleanup of vicinity properties is also complete at Edgemont, South Dakota. Site remedial action continued at Grand Junction and Durango, Colorado. Remedial action work at Mexican Hat, Utah, and Monument Valley, Arizona, was suspended temporarily near the mid-point of FY 1990 due to budget constraints.

During FY 1991, remedial action will continue and an estimated 213 vicinity properties will be completed or initiated. Remedial actions on vicinity properties around the Rifle, Colorado, sites will be accelerated, and site remedial action will be finished at Durango, Colorado, (presently 99 percent completed) and initiated at the Ambrosia Lake, New Mexico, Falls City, Texas, and Lowman, Idaho, sites. At the Gunnison, Colorado, site, a permanent alternate water supply will be installed for residents whose water supplies have been affected by the tailings pile. Work will get underway with the local community to initiate the vicinity property program. Long-term surveillance and maintenance efforts will continue at the nine completed sites.

In FY 1992, remedial action efforts for the processing sites at Rifle and Gunnison in Colorado will be initiated, and remedial action will be resumed at Mexican Hat, Utah, and Monument Valley, Arizona sites.

URANIUM MILL TAILINGS GROUNDWATER RESTORATION PROJECT

The Uranium Mill Tailings Groundwater Restoration Project will restore, as necessary, the groundwater at 24 designated uranium mill tailings sites to ensure compliance with EPA groundwater protection standards. FY 1991 was the first year funding was requested for this project. Pre-project planning costs in FY 1988 and FY 1989 were funded by the Uranium Mill Tailings Remedial Action Project (UMTRAP). The FY 1992 budget request for this project is $2.0 million, an increase of about $1.0 million above the FY 1991 Appropriation.

This project will carry out additional characterization and restoration efforts not covered by UMTRAP as described previously. It is being budgeted as a separate category since the current UMTRA activity has a well defined scope, schedule, and approved Total Estimated Cost. This project, like UMTRAP, is authorized by Public Law 95–604, the Uranium Mill Tailings Radiation Control Act of 1978. Public Law 100–616, the Uranium Mill Tailings Remedial Action Amendments Act of 1988, extended the period of authorization for conducting remedial action for UMTRAP until the end of FY 1994, and authorized an unlimited time period for conducting groundwater restoration activities. DOE pays 90 percent of the remedial action cost and the States pay the remaining 10 percent. For sites on Indian Lands, DOE pays 100 percent of the cleanup costs. Activities in FY 1992 will include initiation of limited site characterization efforts at the Falls City, Texas site and planning and design development efforts at other sites.

ENVIRONMENTAL RESTORATION FUTURE DIRECTION

The Environmental Restoration Program has made significant progress over the past year in identifying and prioritizing its needs for the next 5 years. In addition to meeting the challenges of existing and anticipated regulatory requirements, the Department is looking to the future by taking actions to facilitate the smooth and efficient operation of the Environmental Restoration and Waste Management programs. These include development of a Programmatic Environmental Impact Statement for all activities addressed in the Five-Year Plan, development of a centralized database to facilitate program management and information exchange both within and outside the Department and innovative contracting mechanisms for remediation work at our field installations. While the Programmatic Environmental Impact Statement is not expected to be completed until FY 1993, planning and public scoping meetings were started in FY 1990 and were completed early in FY 1991.

TECHNOLOGY DEVELOPMENT

The primary mission of the Technology Development program is to establish and maintain an aggressive national program for applied research, development, demonstration, testing, and evaluation (RDDT&E). The principal objective of the program is to resolve major technical issues and rapidly advance beyond current technologies for environmental restoration and waste management operations. The program is directed to support activities under the Office of Environmental Restoration and Waste Management. Numerous significant accomplishments have occurred in the past several years as a result of our efforts in applied research and educational development. These accomplishments, listed in Table 3, are an essential component of the overall environmental restoration and waste management program. Continued funding for these activities is essential if we are going to continue to develop the technologies and the skilled workforce necessary to deal with the complex environmental problems we face as we attempt to clean up our sites in the next 30 years.

TABLE 3.—OFFICE OF TECHNOLOGY DEVELOPMENT ACCOMPLISHMENTS

FISCAL YEAR 1990

Eliminated use of chlorinated hydrocarbons (CFCs) at Y–12 Plant

Implemented leveraged agreements with the Air Force and Boeing to demonstrate solvent substitution and develop waste minimization technologies

Implemented environmentally conscious manufacturing program

Completed Three Mile Island radioactive waste shipments without incident

Trained thousands of personnel in radioactive shipping and emergency response (ongoing)

Established K–12 outreach programs at each field site, reaching over 137,000 citizens, 122,000 students, and 2,400 educators (ongoing)

Awarded minority university partnership to enhance curriculum and conduct collaborative research

Initiated community college partnerships to develop 2-year technician degree programs

Awarded 15 minority scholarships and fellowships and over 50 national fellowships and faculty awards (ongoing)

FISCAL YEAR 1991

Achieve full operational status of the Savannah River Integrated Demonstration: Clean Water Act standards achieved in 60 days; Capacity equivalent to 11 conventional stripper wells; First use of horizontal drilling for remediation; and DOE pursuing world-wide patent for concept.

Complete planning of 8 additional integrated demonstrations: Plutonium-contaminated Soils; Uranium-contaminated Soils; Unsaturated Soil Cleanup (arid sites); Newly generated Mixed Waste; RCRA Wastes; Combustible Waste; In-situ Vitrification; Advanced Processing; Startup of Plutonium-Contaminated Soil Integrated Demonstration; Demonstrate spray form casting without generation of acidic heavy-metal wastes; Demonstrate extraction of contaminants from beneath buildings; Demonstrate remediation without exhuming buried waste; Reusable HEPA filters available for use at DOE sites; and Complete integrated robotics planning.

FISCAL YEAR 1992

Full operational status of the Plutonium-contaminated Soils Integrated Demonstration

Full operational status of the Depleted Uranium Waste Minimization Integrated Demonstration at Y–12

Full operational status of the Environmentally Conscious Electronics Manufacturing Integrated Demonstration

Startup of 4 integrated demonstrations: Uranium-contaminated Soils; Unsaturated Soil Cleanup (arid sites); Non-plutonium/uranium metals in Soils; Toxic Chemicals; Plutonium Waste Minimization Integrated Demonstration at Rocky Flats Plant.

Initiate planning of 2 integrated demonstrations: Non-Radioactive Components Manufacturing and General Waste Minimization.

Demonstrate destruction of RCRA components of mixed waste

Create 5 additional academic partnerships

As depicted in Table 3, the Office of Technology Development (OTD) supports the Department's 30-year cleanup goals by identifying or developing technologies which are safer, faster, less costly, and more effective. The OTD program is designed to establish the means to identify and prioritize needed technology development activities, aggressively use all internal and external resources to find solutions, and rapidly transfer those solutions to DOE and other users. In addition, OTD is establishing and conducting programs to expand the national manpower pool available to address DOE environmental restoration and waste management problems. OTD also manages DOE's transportation activities, including the shipment of radioactive material and waste.

The FY 1992 budget request is being proposed under the Atomic Energy Defense Activities (AEDA) appropriation. The Department is also submitting a Supplemental request in the Atomic Energy Defense Activities appropriation for FY 1991. The Technology Development portion of the Supplemental request is $30.0 million. The Supplemental request in concert with the FY 1992 budget request of $309.4 million will provide for a total program of $339.4 million all of which come under the AEDA appropriation. That is an increase over the FY 1991 appropriated level of $133.4 million or 65%. The Transportation Management Division (TMD) budget for FY 1992 is $18.9 million. Table 4 summarizes the Technology Development and Transportation Management FY 1992 budget requests.

TABLE 4.—FISCAL YEAR 1992 BUDGET REQUEST—TECHNOLOGY DEVELOPMENT

[In thousands of dollars]

Subactivity	Fiscal year— 1991	Fiscal year— 1992
Applied research and development	53,431	52,221
Demonstration, testing, and evaluation	96,086	157,428
Innovative technology	4,985	10,800
Program support	19,295	33,429
ER/WM technology integration and environmental education development	27,000	57,800
Program direction	([1])	10,600
Construction: Environmental and Molecular Science Laboratory, Richland	5,170	7,100
Total	205,967	339,378
Less adjustment for fiscal year 1991 supplemental request	....	−30,000
Grand total	....	309,378
Transportation management	([2])	18,870

[1] Funding in fiscal year 1991 was appropriated in a central EM program direction line.

[2] This activity was appropriated in the waste transportation and site management program in fiscal year 1991.

A large part of the increase over FY 1991, $60.1 million, is associated with integrated RDDT&E demonstrations and programs. It provides for the continuation and expansion of five fully operational demonstrations; the buried waste program at Idaho Falls, Idaho; underground storage tanks at Richland, Washington; cleanup of volatile organic components in saturated soils and groundwater at Savannah River, South Carolina; plutonium contaminated soils at the Nevada Test Site; and cleanup of uranium contaminated soil at Fernald, Ohio. Additional demonstrations being considered in FY 1992 include: cleanup of inorganic contaminants in soils and groundwater, in-situ vitrification, cleanup of non-volatile organic chemicals in unsaturated soils and groundwater at arid sites; waste treatment/destruction demonstrations; and decontamination and decommissioning of concrete and metal structures. New integrated programs will be introduced to include characterization of wastes and sensor technology development.

An increase of $5.8 million is requested to expand innovative technology activities through solicitation of proposals from industry and the university community to address identified technology gaps. An additional $14.1 is requested for critical cross-cutting support activities including analytical laboratory management, robotics technology development, risk management, international program activities, prioritization of research techniques, and program management activities.

Environmental education development is requesting an increase of $19.7 million to establish four additional academic partnerships (for a total of five) and to expand existing and new regional partnerships into a National Education Consortium. An additional $11.1 million is requested for technology integration activities to initiate new activities that will infuse technologies from external sources and expedite diffusion of technologies to the private sector.

The Program Direction request, $10.6 million, will provide for 111 technology development headquarters and field office staff. This funding was requested in a separate headquarters Program Direction account in FY 1991. This funding is intended to develop new training initiatives, continue preparation of a Transportation Environmental Impact Statement, and Increase Tribal, local and general public involvement.

Our request for Transportation Management for FY 1992 is $18.9 million. Finally, an additional $11.9 million over the FY 1991 appropriation is requested for the Environmental and Molecular Science Laboratory, Richland, Washington, to provide for start of construction activities. The FY 1991 appropriation for EMSL was in Energy Supply Research and Development; for FY 1992, these funds are requested in Atomic Energy Defense Activities.

TECHNOLOGY DEVELOPMENT PROGRAM OVERVIEW

The Technology Development program addresses needs in five areas: (1) soil and groundwater cleanup, (2) waste retrieval and processing, (3) waste minimization and waste avoidance, (4) future personnel requirements, and (5) transportation. The Technology Development program is designed to respond to the users' needs. In this case, the users are the Waste Operations Division, Environmental Restoration Division, the Office of Nuclear Energy, and the Office of Defense Programs.

INTEGRATED DEMONSTRATED PROGRAMS [ID]

Some of the more significant RDDT&E component programs which will play a major role in EM activities in FY 1992 are discussed below. The RDDT&E program is organized around the Integrated Demonstration concept which focuses and directs research activities toward one objective—implementation of fully workable, cost-effective solutions to DOE problems. Integrated Demonstrations and Integrated Programs are means by which we will move technology products from universities, industry, government agencies, international agencies, and DOE laboratories into the hands of the user. An Integrated Demonstration is a cost-effective mechanism that assembles a group of related, synergistic technologies at one site to evaluate performance individually and as a complete system for a timely solution to environmental restoration and waste management problems.

The first Integrated Demonstration (ID) was developed at the Savannah River Site to remediate soils and groundwater contaminated with chlorinated solvents. After 60 days of operation, the Savannah River ID reduced groundwater contamination to Clean Water Act standards. The ID has removed over 15,000 pounds of volatile organic compounds (VOCs) from the sub-surface, equivalent to the capability of eleven conventional stripper wells. Data suggests that the system is effectively removing solvents from the subsurface, without causing the underground plume to spread. This is the first time horizontal drilling technology has been used for environmental restoration.

The ID approach is projected to be 3 times more cost effective than conventional pump and treat technology. The Savannah River ID could save DOE over $70 million in technology demonstration, testing and evaluation costs and over $100 million in remediation operating costs. Both NASA and EPA are interested in transferring this technology for use at NASA sites that are contaminated with volatile organics. We anticipate that the Integrated Demonstration technologies will be transferred to NASA within the next two months.

The ID concept will be applied to other environmental restoration issues within the DOE complex in FY 1993. Integrated Demonstrations will be developed to address: cleanup of volatile organic compounds in arid soils and groundwater, cleanup of plutonium-contaminated soils, cleanup of uranium in contaminated soils, remediation and treatment of retrieved waste, and the buried waste program at Idaho (the current program is transitioning to an ID). Integrated Demonstrations can be categorized in three general areas: (1) groundwater remediation and soils cleanup, (2) waste retrieval and waste processing, and (3) waste minimization. We hope to initiate Integrated Demonstrations to implement solutions to major problems at other DOE sites.

WASTE RETRIEVAL AND PROCESSING TECHNOLOGIES

In FY 1991, technologies will be developed and demonstrated to remotely excavate material from the subsurface. An integrated demonstration was initiated in FY 1991 to address characterization, removal, and processing of wastes in the Hanford underground storage tanks. OTD is also continuing to support the Idaho Buried Waste Program and will attempt to focus a variety of research and development activities into a single integrated demonstration program in FY 1991.

Two engineering scale, in-situ vitrification demonstrations were completed at INEL in FY 1990 on mock-up waste pits, one with stacked drums and high metal content waste and one with randomly deposited waste. The demonstrations showed the potential to cleanup a site without exhuming buried waste. OTD also demonstrated the vacuum vapor extraction of carbon tetrachloride from beneath the Radioactive Waste Management Complex. Implementation of this technology can control the spread of contamination and aid the cleanup of presently contaminated areas.

WASTE MINIMIZATION AND AVOIDANCE

This priority effort for the substitution of materials and the development of new processes to reduce or eliminate the use of hazardous materials in weapons production. This includes: development of alternative metal-forming processes that consume less stock and yield less waste, recycling of scrap, and substitution of non-chlorinated solvents. Aggressive waste minimization is the best way to reduce the future cost of defense waste management and conserve limited defense funding for use in weapons design, materials production, and environmental restoration.

Several advances have been made in waste minimization. In February, 1990, OTD signed a memorandum of agreement with the Air Force and Boeing to leverage $2 million in Federal funds into $12 million to address joint solvent substitution goals. At DOE's Y-12 site, the use of all chlorinated hydrocarbons in the oralloy process has been eliminated. Also, the spray forming of surface coatings with chromium has been demonstrated without the generation of highly acidic heavy-metal wastes that are produced by electroplating. Finally, OTD implemented an environmentally conscious manufacturing program at Sandia National Laboratory.

In FY 1991, OTD and the Office of Defense Programs (DP) jointly funded a call for proposals for the minimization of waste generation at DP production facilities.

TECHNOLOGY INTEGRATION

This program ensures the rapid, implementation of efficient technology for environmental restoration and waste management initiatives by encouraging transfer of technology among Federal agencies, industry, universities, national laboratories, and appropriate international partners.

EDUCATION DEVELOPMENT

This program identifies DOE's human resource needs for environmental restoration and waste management and develops innovative national programs to ensure that these needs are met. The program establishes partnerships with the academic community to promote environmental sciences curricula and encourage students to pursue environmental management careers. The program also aims to involve minorities, women, Native Americans, and disadvantaged students in environmental programs. To pursue these goals, pilot DOE-university partnerships, scholarship and fellowship programs, and an outreach program for grades K–12 have been established.

To date, EM education activities have reached over 100,000 students; awarded 15 scholarships and fellowships at minority institutions; and awarded 25 scholarships, 20 fellowships, and 6 young faculty grants which were nationally competed. As an example of program activities, at the Idaho site the Science Education Outreach Program has implemented activities that will increase the exposure of rural students and their teachers to the world of science and math.

ENVIRONMENTAL AND MOLECULAR SCIENCES LABORATORY

Construction of the EMSL at the Hanford Site will provide a research facility that will allow DOE to study fundamental molecular processes in the environment and develop permanent solutions to the Nation's energy, environmental, and waste recovery problems.

TRANSPORTATION MANAGEMENT DIVISION (TMD)

This division develops policies and management procedures to facilitate DOE transportation activities, including the shipment of radioactive material and waste. In addition to developing safe guidelines for DOE's packaging, including packaging maintenance and use, TMD conducts other operational activities, such as: (1) negotiating rates and services, (2) developing DOE specific standards, over and above regulatory requirements, (3) training DOE and contractor personnel and others on regulations and procedures governing radioactive and other hazardous material shipments, and (4) maintaining data systems to enable DOE and other interested parties to retrieve and analyze information on DOE shipments.

The TMD also appraises DOE field operations to assure that they are in compliance with regulations and procedures, conducts research and development, manages the EM emergency preparedness program, and facilitates interactions between DOE and outside parties interested in DOE's transportation activities. During the past year, TMD completed all Three Mile Island waste shipments without incident. In addition, TMD trained several thousand personnel in packaging, shipping, and emergency response.

QUALITY ASSURANCE

Due to the magnitude and diversity of the EM program, comprehensive internal oversight must be provided if the program is to be managed effectively. Accordingly, we have created an Office of Quality Assurance and Quality Control (QA/QC) to provide the necessary oversight function for our overall program. In essence, QA/QC is the common thread that runs through the entire program to ensure consistency and accountability. Development of uniform internal procedures and then conducting internal audits to measure the effectiveness of procedural implementation is one essential component of our QA/QC program. Another major effort is directed at measuring the cost effectiveness of program implementation by performing cost validations at field activities. Responsibility for the Implementation of a successful QA program extends throughout our office—all the way from Office Director to the "line organizations" who manage and perform the work. This responsibility for program implementation also extends to those functions performed for us by our contractors.

To effectively perform its function, The Office of QA/QC is organized into three divisions—Environmental Compliance, Engineering and Cost Evaluation, and Safety and Health Compliance. The Environmental Compliance Division develops and coordinates environmental compliance policy and conducts environmental audits/appraisals to assure compliance with environmental regulations and regulatory responsiveness. The Engineering and Cost Evaluation Division develops and coordinates policy on engineering design/effectiveness and cost effectiveness, and performs audits/appraisals of the technical validity and cost effectiveness of our programs and projects. Finally, the Safety and Health Compliance Division develops and coordinates safety and health compliance policy and conducts audits/appraisals of safety assurance systems and personnel. As the size of the EM organization and program grows, the Office of QA/QC will assume an even greater role in oversight to ensuring the effectiveness of overall program implementation.

CONCLUSION

The Department's Environmental Restoration and Waste Management Program appears to be headed down the right path, but it is clearly recognized that there is a long way to go. The better the program is defined from the standpoint of requirements, schedule, and cost, the easier will be the job of completing the cleanup in the next 28 years. Two current efforts within the Department will be major contributors to this stabilization. By 1993, the goal is to have the Five-Year-Plan reach budget quality standards. Also in 1993, the Department plans to complete the Programmatic Environmental Impact Statement for environmental restoration and waste management. In concert, these two initiatives will establish the overall programmatic milestones, the costs to achieve those milestones, and as a result, make the program as efficient and cost effective as possible.

There has been progress made to date, but we must continue to direct our efforts at putting in place an effective long range program. Central to this is the need to control our substantial budget and spend appropriated funds wisely. A major component of this effort is directed at achieving a cost estimating process that is accurate and applied uniformly at all sites. In addition, we need to continue to actively pursue research and development and utilize those technologies that will help us to do the work safer, faster, better and cheaper. State-of-the-art cost estimating methods and the application of the latest environmental technology are the major keys essential to the overall success of the EM program.

ROLLINS CO. NUCLEAR WASTE DISPOSAL PROBLEM

Senator JOHNSTON. Thank you, Mr. Duffy.

The Baton Rouge State advocate has revealed what they call a very big gap in Federal regulations regarding the shipment and disposal of nuclear waste from principally Oak Ridge. What they point out is that some 800 tons of nuclear waste have been shipped into a company called Rollins in Baton Rouge, that Rollins has disposed of this 800 tons by burning or by burying without even having detection devices.

When NRC was asked about it, they said, "Well, we do not regulate it." When EPA was asked about it, they said, "We do not regulate it; ask the NRC." And so, apparently no one is regulating the shipment of some 800 tons of nuclear waste. They are shipped to my State, to Baton Rouge, where they are burned or buried apparently without anybody even having so much as a detection device.

Now, can you tell us whether there is, in fact, a gap, a hiatus in regulation?

Mr. DUFFY. I think there is a gap in that operation. No. 1, the material from Oak Ridge probably did not meet the DOE orders that we presently have in effect, from a protocol standpoint.

As I understand it, in the first quarter of 1990 they shipped 30,000 gallons of oil that had concentrations of enriched uranium in it of 1 part per 10 million, which is an extremely small amount. But the requirements of the Department of Energy are that you establish the protocol for identifying how you can ship that material off-site.

You either have to demonstrate it by ALARA or you have to demonstrate that it came from an area that is not contaminated and is outside the contamination boundary, or you have to identify the method used to establish it.

We had a similar problem at Rocky Flats about the same time period. And what we did at Rocky Flats, it was on motor oil. We went off-site to the local stores and bought new motor oil, measured the activity levels from a background standpoint. We then randomly sampled cars outside the plant boundary to identify what the activity was in that oil. And then we measured the oil inside the boundary and compared the three.

If the oil from vehicles inside the radiation-controlled area compared to the concentrations from natural background, we then went to the State of Colorado and said, "This is what we consider to be noncontaminated material based on this analysis." That is what should have been done, in our opinion, in this case, if we had known about it.

Senator JOHNSTON. And no one is regulating this at the present time.

Mr. DUFFY. That is right.

Senator JOHNSTON. Now, who should regulate it? The NRC?

Mr. DUFFY. No; in my opinion, it is an EPA-permitted incinerator, so the EPA should specify what they should accept and what you have to do, from a protocol standpoint for them to accept it. The NRC has identified a criteria which they call below-regulatory concern, but they did not establish a protocol on how you demonstrate below-regulatory concern.

My opinion is, in order to ship to a permitted hazardous waste treatment facility, you should be required to demonstrate how you came to the conclusion that it was a nonradioactive substance from the standpoint of unrestricted distribution.

Senator JOHNSTON. Well, I want to fix this by Federal statute. How would you suggest that we place the responsibility in Federal law?

Mr. DUFFY. I would place the responsibility on the Environmental Protection Agency to identify in their regulations what they will accept from a radioactivity standpoint, and how you demonstrate through your protocol that you meet that.

Actual background is a very restrictive operation, going into concentrations of material associated with some of their additional regulations, such as the Safe Drinking Water Act, Clean Water Act, and the Clean Air Act, all have below-regulatory concern values in them now. So it would be a similar type of operation.

Senator JOHNSTON. Well, Mr. Duffy, I would invite you, in fact, strongly urge you to send us some language whereby we can accomplish what ought to be accomplished. Because we want to, if EPA is the proper group to regulate it, we would like to insert that language in the proper legislative vehicle, perhaps in this bill. And I would like to have it from you and your staff, if you would, how we should fix that.

Mr. **DUFFY**. Certainly, Mr. Chairman, glad to do it.
[The information follows:]

REGULATION OF RADIOACTIVE WASTE DISPOSAL

In response to the Rollins incident, DOE has ordered a temporary moratorium on shipment of Resource Conservation and Recovery Act—and Toxics Substances and Control Act-regulated wastes that, originate in areas where they have the potential for contamination by radioactive materials to commercial treatment, storage, and disposal facilities. The moratorium will last until DOE Headquarters can review and approve the methodologies and criteria used by each site for certifying wastes are appropriate for unconditional offsite release. The certification will involve development of a formal performance objective to ensure consistency in review and application of the criteria. Additionally, DOE is developing a BRC policy that will address any potential confusion regarding wastes that are appropriate for unconditional offsite release.

It is DOE's opinion that a generic below regulatory concern (BRC) standard(s) should be developed for radiation in wastes rather than continue to make such determinations on a case-by-case/product-by-product basis (e.g., scintillation cocktails containing tritium and carbon 14, smoke detectors, etc.). Such a standard would be based on a determination that any waste matrix containing trace amounts of radiation that is below a stipulated level may be safely treated, stored, disposed, or otherwise managed in a non-NRC-licensed disposal facility. The NRC is currently in the process of working on a consensus and building a process for the BRC concept.

The lack of a below regulatory concern level for radionuclides is central to the Rollins incident. DOE does recognize, however, that establishing a single BRC may be difficult and that standards for different types of disposal practices may need to be developed. DOE is willing to work with the Committee to draft appropriate legislative language to address the BRC issue.

Senator **JOHNSTON**. Thank you very much. The majority leader is on the phone for me, so let me ask Senator Reid to take over at this point.

TRIPARTY AGREEMENT

Senator **REID**. Would you explain to the committee the recent difficulties concerning the triparty agreement between DOE, the State of Washington, and EPA concerning the waste vitrification plant at Hanford?

Mr. **DUFFY**. Yes, sir. I think the No. 1 problem was communication. In July 1990 testimony before Congress we identified our proposals for the fiscal year 1991 budget and stated that we were considering not funding the vitrification plant, because of technical difficulties that we had just determined. As a result, the budget did not provide for the construction of the Hanford waste vitrification plant.

In retrospect, we should have identified to the State of Washington prior to that, that this was a consideration and why. We did not have technical information to my satisfaction that supported utilization of the B plant, which is a pretreatment plant for the vitrification process.

No. 2, we had just identified tremendous uncertainties in the type of material that was going to be treated. By the triparty agreement, we could have done that informally or formally. We did it in what we thought was an informal manner; in the future, we will do it formally.

Senator **REID**. What is the current cost estimate for the Hanford plant?

Mr. **DUFFY**. $1.2 billion for the Hanford waste vitrification plant. The B plant was identified as a pretreatment plant, and $24 million had been spent on upgrading that plant for a combination of reasons. No. 1, just because a plant is not being used does not mean that it does not have to meet the current discharge requirements for RCRA. So the B plant did not meet it, and we had to make modifications on that basis.

Air emissions were not satisfactory, so we had to make modifications for that. And then we were going to use it for a research and development operation. That is when we became responsible for that operation as far as Hanford was concerned. And at that time, in a technical review, we found, in my opinion, considerable areas of deficiency in the systems approach to that operation. And I stopped the operation at that time.

Senator REID. What is the status with the technology for the plant in its design?

Mr. DUFFY. Right now we have a commitment to the State of Washington that will complete the pretreatment analysis by December 1991 and then present it to them. In the meantime, we have looked at other options, and we have nuclear fuel and nuclear material stored throughout the Hanford site.

When we looked at it, we thought we could build our canister plant, which is a storage facility, consolidate all of our material in that plant and then clean up the other areas. So what we recommended to the State of Washington was that we start construction on the canister plant, we would also start construction on additional tankage so we could treat immediately the material in the double-shell tanks after we build the new tanks.

The State of Washington agreed with that and we are proceeding on that basis. So I think we are now in consonance with the State of Washington on starting construction of the area plot for the Hanford waste vitrification plant, starting construction on the canister building where we can consolidate the radioactive material, and doing designs of new double-shell tanks.

So it appears that we are now working in consonance with the State of Washington. We had an agreement which we negotiated last night. There were people in here who were negotiating on the phone until 11:30, not because of this committee but because we had a deadline to negotiate with the State of Washington by May 15, and the Environmental Protection Agency. And we now have a satisfactory modification to the triparty agreement by using the requirements of the triparty agreement.

Senator JOHNSTON. Is that all of your questions?

Senator REID. Yes, Mr. Chairman.

HANFORD WASTE VITRIFICATION PLANT

Senator JOHNSTON. Thank you very much, Senator Reid. What are the major concerns or technical difficulties in building and operating the Hanford waste vitrification plant?

Mr. DUFFY. The major concerns are No. 1, the sampling, and I think everybody is familiar with the 101–SY tank. This is the one that generates hydrogen that is emitted every 13 weeks. The cause for the hydrogen generation is not completely known, so we are taking radioactive samples of that tank.

The tank is a 1,000,000-gallon tank, and it is very difficult to get the samples. We have six samples so far and we are taking a fullprobe sample within the next 2½ weeks to determine if the tank emits hydrogen on the expected dates. That is a very complicated operation. We have to determine what are the constituents in the tank, what are the various combinations of chemicals that can take place.

Once we have determined that, we have to define how we are going to treat it. The treatment operation for one of the areas is called a TRUEX process, which is a transuranic extraction process that is going to take 6 years to develop. In process of 6 years, we will be into 90 percent of construction on the building.

So those are some of the problems. The present pretreatment plant, B plant, has material that would corrode under certain conditions, and we are not about to use that because it does not meet the Resource Conservation and Recovery Act requirements of double encapsulated piping. So we are looking at new treatment there. We are developing treatment at the Savannah River site under the defense waste processing facility, which may be applicable to the Hanford waste vitrification process.

FRENCH VITRIFICATION FACILITY

Senator JOHNSTON. The French—I think it is Marcoule—will have a vitrification facility that seems to have worked well for years. Why are we so far behind them in vitrification?

Mr. DUFFY. I do not think we are far behind. They are treating an acid waste; we are treating a neutralized waste. Their process is very small at Marcoule. The process at La Hague is more comparable to ours. The waste that we have at Hanford is totally different than the waste that they have in France and the pretreatment is totally different.

The second thing is we have to meet NRC requirements in the civilian radioactive waste management program for putting it in a repository. The French do not have to do that.

TREATMENT OF NEUTRALIZED WASTES

Senator JOHNSTON. Is it more difficult to treat the neutralized waste?

Mr. DUFFY. Yes, sir; it is much more difficult. We might have made a mistake in doing that in the past, but unfortunately we now have 167 tanks at Hanford and 53 tanks at Savannah River that have that material in it. So we do not have a choice in selection of material anymore.

We have 53 million gallons, I believe, at Hanford, and another 30 million gallons at Savannah River—in round numbers, 100 million gallons of waste already there. So, we are stuck with the waste we have, and our treatment process is then built around it.

I do not think we are behind schedule or lack knowledge, because Pacific Northwest Laboratory [PNL], developed a vitrification process in the early 1970's and I think we know as much about vitrification as anybody.

Senator REID. Mr. Chairman, would you have him describe how large a 1 million gallons tank is? I am just curious.

Senator JOHNSTON. Yes; how large is it?

Mr. DUFFY. It is about, let us see, 100 feet in diameter and 48 feet high, and we fill it up to about 75 percent of the volume. And the problem with the tanks at Hanford is when they mixed the material back in the 1970's, they did not do a pre-analysis of what kind of complexing you would get.

And as a result, we have various materials in that tank that have complexed into a salt cake that is about anywhere from 1 to 4 feet thick. That captures the gas in that tank and then the tank generates and lifts up the salt cake, the salt cake cracks, and then the gas is emitted.

Well, you could get to a flammability or an explosive limit, depending on the amount of hydrogen gas there, and that is why we got into the problem. So we have numerous and wonderful challenges chemically to solve before we can vitrify it.

Senator JOHNSTON. What is the solution?

TWO SOLUTIONS FOR TO ACHIEVE VITRIFICATION

Mr. DUFFY. Two solutions. No. 1, take the samples, find out what the complexing agents are, then neutralize it in place or pump it to another tank and neutralize it in that tank. That eliminates the immediate problem of the 101–SY and the generation of gas.

Senator JOHNSTON. Well, I am really not asking for all the chemical details of what you are doing, as how far are you away from the solution?

Mr. DUFFY. I would think, it takes us 2½ years to build a tank, it takes us another two samples, one next week and one around August, and we will have a good understanding of the materials in the tank. We will be building these additional tanks so we can pump the material out and neutralize it in the tank, and that will eliminate the immediate problem of a flammable mixture in the tank.

The vitrification program is 1999, and that has been the schedule from the beginning.

Senator JOHNSTON. The program, you mean the completion of the facility that——

Mr. DUFFY. The construction; right.

Senator JOHNSTON. So that it will be ready to operate during the calendar year.

Mr. DUFFY. We will be ready to test at that time and we will be testing various types of waste at that time. It is very complex from the standpoint of meeting NRC and DOE criteria for the glass logs.

We have to demonstrate it with surrogate materials first. Once we have demonstrated that we can meet the criteria, we go to radioactive criteria. At the defense waste processing facility at Savannah River, it will take us 2½ years of testing to demonstrate that.

Senator JOHNSTON. Senator Reid, did you have any further questions?

Senator Domenici?

RESEARCH AND DEVELOPMENT FOR CLEANUP TECHNOLOGY

Senator DOMENICI. First, let me apologize for being late, I did not have a chance to review your very detailed testimony. So if what

I am going to ask you has already been answered, I apologize and will make it brief.

When you first started putting together the long-term plan for research and development with reference to cleaning up the various sites around the country, you remember the discussions of how much that might ultimately cost.

Huge amounts of money, and you and those who work for the Department were saying, we are very hopeful that with a well-fashioned research and development program, we are going to find some very new and different ways to get this waste under control, so we are not at all sure that those costs are going to be right.

It seemed to me that you were telling us that the year that we are in, we need $200 million, or thereabouts, for this research, so we can get new ideas. Part of it went to the laboratories, part of it went to other contractors.

Am I correct that thus far that is about what you were thinking of for this year?

Mr. DUFFY. This year is $354 million.

Senator DOMENICI. No; the year that we are in.

Mr. DUFFY. Oh, yes; yes, sir.

Senator DOMENICI. Well, it seemed to me that you did not get to spend the $200 million on that, did you?

Mr. DUFFY. Oh, yes; we did. We spent almost, as I indicated, I think we are at 62 percent or thereabouts, as of March. And we have made some significant accomplishments, one of which was the integrated demonstration at Savannah River. We have identified that we will approximately save $70 million in treatment at the Savannah River site as a result of the directional drilling and evacuation operation.

We had an excellent program at Sandia in New Mexico, in your State, where we developed a robotics operation for mapping underground tanks. We intend to use that at Fernald, to use a laser tomographic mapping operation for the K–65 silos. We are identifying instrumentation programs at Sandia also from that standpoint. We have done——

Senator DOMENICI. Let me just ask this. It seems to me that throughout the year, as you had to move both in the research program and in the cleanup program, that you were in for some surprises on the cleanup side. And I guess I am having difficulty finding out where does the money come from? Which accounts? When you make a decision to move more expeditiously and with more resources in the Rocky Flats area?

Mr. DUFFY. The only way we can do that is with, inside the environmental restoration program, or if it is a waste management problem, with inside the waste management program. And if it is going to transfer from either waste management, environmental restoration, corrective activities, or research and development, we have to come in and get a reprogramming.

So we cannot indiscriminately take from different color money to compensate for that. And that is why we came in for reprogramming of $61 million to handle the Hanford tank problem, as one; some underground treatment operations as a second, and to get additional money for some other problems that we have had in facilities.

CLEANUP R&D FUNDING

Senator DOMENICI. So there has not been any significant reduction in the R&D effort or in the ongoing DOE laboratory efforts in order to fund cleanup?

Mr. DUFFY. No; if there has, I will identify it specifically for the record. But Clyde Frank is here, and he is head of the research program. What we have worked out with the laboratories in the environmental restoration area is what we want to do and what we have done, which is conducting research in the actual cleanup.

If there is a new method, we get approval from the State or the Environmental Protection Agency to apply that method as part of the normal cleanup program so that we can compare the state-of-the-art technique with the new research. And that is what we did at Savannah River, and it was extremely successful. In fact, we now have three licenses out there for application, and I think its application to the New Brunswick operation in New Jersey, which was in yesterday's paper, in my opinion is an area that we ought to be trying it out on.

RISK ASSESSMENT OF CLEANUP SITES

Senator DOMENICI. One general question, then one specific one. Did you not, at one point, start down the path of doing the cleanup in what you had chosen to call risk-assessed cleanup sites?

Mr. DUFFY. Yes, sir.

Senator DOMENICI. That sounds pretty logical. You ought to take the highest risk one first. But I gather that ran into some difficulty. If that is correct, what happened? And what kind of assessment are you now using to determine priorities?

Mr. DUFFY. We do a risk assessment priority now. In fact, we are doing it in a much more organized manner. We met with the National Academy of Science and an external risk group. And our 1992 environmental restoration budget is built around the risk assessment.

ORDERLY PRIORITIZATION FOR SITE CLEANUP

Senator DOMENICI. Do I understand that of the hundreds and hundreds of sites, some very large cleanup, some very small, to the extent that you are planning them, you are trying to do those that are more serious from the standpoint of possible risk first? And some kind of orderly prioritization?

Mr. DUFFY. Yes, sir, and I think if you look at our budget in relationship to the environmental restoration area, Oak Ridge has the largest amount of funding, about $600 and some-odd million. And they have the highest amount of contaminated areas in relationship to off-site, which is where the problem is.

The second area is the Hanford area, and as you know, that is a significant area from, again, release to the environment. The third area is Savannah River, and it has an underground water problem. The fourth is Fernald. All of those are the high-risk areas because they have either off-site leakage at the present time or will within a short period of time. Rocky Flats is the fifth area, and that has a potential off-site leakage in about 30 years.

Senator DOMENICI. Thank you very much, Mr. Chairman.

STATEMENT OF FRANKLIN G. PETERS, DEPUTY DIRECTOR, OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT, DEPARTMENT OF ENERGY

NUCLEAR WASTE FUND

Senator JOHNSTON. Next, we will hear from Mr. Franklin J. Peters, Deputy Director of the Office of Radioactive Waste Management.

Mr. Peters, I notice in your statement that the first part deals with the State of Nevada and difficulties you have had there.

I think we are well familiar with that. Senator Reid has testified before the Energy and Natural Resources Committee. Senator Domenici is a member of that committee as well. We have had 2 days of hearings on that subject. Proceed as you will, but we are particularly interested in what the scientific status of both Yucca Mountain and the MRS. I mean what holes you have and what more you are prepared to do, and what the status of your investigation is.

Mr. PETERS. Thank you, Mr. Chairman. I will be pleased to truncate my remarks with respect to your request. Let me also note that Dr. Bartlett certainly wishes he could be here rather than recovering from oral surgery, which is the current situation.

Senator JOHNSTON. Give him our best.

Mr. PETERS. I do have Dr. Bartlett's written statement, of course, for the record if that is permissible for the committee.

Senator JOHNSTON. That will appear in the record.

Mr. PETERS. I also would like to note on a personal basis, my wife, Jan, has joined us today, and for the record it is her birthday.

Senator JOHNSTON. Happy birthday.

Senator REID. It is a tough place to be on your birthday. [Laughter.]

FISCAL YEAR 1992 REQUEST

Mr. PETERS. With your permission, I will move past the early part of the statement and get into the specifics of our budget. Our appropriation request for the nuclear waste fund for fiscal year 1992 is $305.1 million.

The planning foundation for this request is that we will begin new surface-disturbing activities at Yucca Mountain in January 1992, and that we will have a firm MRS site by the end of 1992. There continues to be——

SITE PERMITS

Senator JOHNSTON. Let me stop you at that point. You would have to have permits for new surface-disturbing activities?

Mr. PETERS. That is correct, sir.

Senator JOHNSTON. And if you do not have those permits, then what?

Mr. PETERS. If we do not have those permits, there is essentially $6 to $7 million worth of activity which we have earmarked in the 1992 request that is specific to moving forward with the work that is possible only after we have the permits. The remainder of the request for Yucca Mountain would remain intact whether we had permits or not.

Senator JOHNSTON. And what kind of work is that?

Mr. PETERS. Senator, that is primarily continuing with the development of our planning activities in both the scientific and engineering areas. We will be moving forward with the engineering of the exploratory studies facility, which I know you have a primary interest in, as well as continuing to develop the necessary study plans and other activities to assure that in fact we will be ready to continue to move forward when the permits are available to us.

We will continue to, of course, interface with the Nuclear Regulatory Commission in the context of the pre-licensing consultation arrangement which has been established under the law, and respond to the interested and affected parties.

We will also interface not only with the State and the counties, but also extensively with the Nuclear Waste Technical Review Board established by Congress. It does, in fact, require a significant amount of technical resource to be responsive to that organization.

SURFACE ACTIVITIES AT YUCCA MOUNTAIN

Senator JOHNSTON. What are the surface-disturbing activities?

Mr. PETERS. The two that we are now ready to initiate, sir, are the trenching at Midway Valley, which basically will provide us additional information in terms of the faulting activity in that area, and also——

Senator JOHNSTON. What do you mean, trenching? Digging a trench?

Mr. PETERS. Yes, sir.

Senator JOHNSTON. How deep?

Mr. PETERS. I am not sure specifically. Just a moment—20 feet deep, sir. And in addition to that, we will be deepening——

Senator REID. How long would that be?

Mr. PETERS. It varies from a couple of hundred feet to almost one-half a mile.

Senator JOHNSTON. You mean there would be more than one trench?

Mr. PETERS. Yes.

Senator JOHNSTON. Are there other places you are going to be digging trenches other than Midway Valley?

Mr. PETERS. Eventually there will be; yes, sir. But in terms of the specifics that we intend to initiate in 1992, it would be Midway Valley. And there also will be deepening of an existing trench in the same general area to examine the calcite-silicate deposit, which is essentially an area of controversy, vis-a-vis the Szymanski issue.

And that would be to essentially pull more data to determine if, in fact, there is legitimacy to Szymanski's theory of ground water movement.

Senator JOHNSTON. And the trenches will do that, or do you need them deeper?

Mr. PETERS. We need to deepen the existing trench, probably, in our view, not very far. And the data from that will be plugged into analysis to determine what we have.

Senator JOHNSTON. So the Szymanski theory can be proven or disproven by trenches of, how deep? 20 feet or so?

Mr. **Peters**. I would expect that we probably are planning on about 10 feet or more in depth, so that will begin the work in terms of proving or disproving the theory.

Senator **Johnston**. You have to have the 2,000-foot hole, in effect, to prove or disprove or do the trenches, not necessarily at Midway Valley, but do trenches solve the problems?

Mr. **Peters**. Trenches by themselves will not solve the problem. We expect there would be additional data that could be gathered from the exploratory studies facility.

Senator **Johnston**. You need the deep holes?

Mr. **Peters**. Yes; absolutely.

Senator **Johnston**. For the Szymanski theory?

Mr. **Peters**. I believe we do; yes.

Senator **Johnston**. OK.

FISCAL YEAR 1992 REQUEST

Mr. **Peters**. There continue to be, as I indicated, a certain large amount of significant work that is going on at Yucca Mountain. And over the last decade, of course, we have put in many drill holes, trenches, and pits, and nearly 600 monitoring stations that we use on a continuing basis to essentially help us develop background for regulatory compliance, and also to help us continue to better understand what we are dealing with at the Yucca Mountain site.

These activities, however, are not surface disturbing. We continue to prepare the scientific study plans. As I indicated, we are working with the Nuclear Regulatory Commission, the Technical Review Board, and the other interested parties. And we also are continuing to put a great emphasis on improving our management and control capabilities both at Yucca Mountain and in the program in general.

With regard to the monitored retrievable storage facility, which is, of course, for interim storage of spent fuel before disposal, as authorized by the Congress in the amendments act of 1987, the initial most important step, of course, is to find a site for that facility.

The lead responsibility for that siting at the present time lies with the nuclear waste negotiator, Mr. Leroy. I am pleased to report that Mr. Leroy is, in fact, making very good progress at developing the basis for finding a volunteer host for that facility. And we are very optimistic that he will be successful.

The planning base for our budget request assumes that the negotiator will be successful in concluding an agreement with an MRS host by the end of 1992. We are supporting his siting efforts through a memorandum of understanding between the department and the negotiator's office. And we will be doing those things that are necessary internal to the Department to make sure that we can meet the Secretary's goal of accepting spent fuel in 1998 from the utilities.

During fiscal year 1992, under our budget request, we will be doing MRS design, environmental compliance and licensing activities, and doing only those things, of course, that can be done independent of having a specific site identified. But there are many site-independent activities that we can do. We will continue to develop the transportation system and the logistics needed for spent fuel receiving, and continue to work with the utilities to establish the necessary protocols for spent fuel acceptance.

In summary, we expect to have everything ready for spent fuel acceptance in 1998 and our budget request reflects the levels and types of activities needed to meet this goal. In summary, Mr. Chairman, we do have a clear sense of mission. We have sound plans for meeting our goals and our commitments. And while we are making progress in the courts, that is not enough.

I would again emphasize that the critical path for program success involves full funding, as well as enactment of the National Energy Strategy Act so that we can proceed with our congressional mandate. I ask your help and the help of the subcommittee in enacting that legislation and to ensure that we have the funds necessary to implement our mandate from Congress.

Mr. Chairman, I know that you and many of your colleagues share our view that success of this program is vital to the future of the country. Ten years from now, I do not want to look my sons in the eyes and tell them that this generation failed. I believe that we have the opportunity for success, and we seek your assistance.

Mr. Chairman, thank you very much for your time.

[The statement follows:]

STATEMENT OF JOHN W. BARTLETT

Mr. Chairman and members of the subcommittee, I am pleased to have the opportunity to appear before you today to present information concerning the fiscal year (FY) 1992 budget for the Office of Civilian Radioactive Waste Management (OCRWM). I welcome this opportunity to appear before you. Last year at this time, I had just been confirmed as Director of the Civilian Radioactive Waste Management Program. In the time since my confirmation, we have taken a number of significant actions to move the waste management program forward. The budget request I will discuss with you reflects the results of these actions and the follow-on activities which will continue the progress we have made. The budget includes major activities planned for FY 1992 under the Nuclear Waste Fund program. Also included are Civilian Radioactive Waste Research and Development program activities.

To set the stage for the budget I will present, I would like to review some of the major accomplishments of the program during the past year. These accomplishments include a number of victories in litigation related to the Yucca Mountain site characterization program, and I would like to summarize the litigation status for you. Also during the year, a number of accomplishments have led us to a state of full readiness to begin new priority site characterization activities at Midway Valley and Trench 14 at Yucca Mountain, Nevada. However, even with our significant accomplishments, there remains an impediment to initiating new site characterization activities—the failure of the State of Nevada to process our applications for permits required to begin such activities, and, in general, the constant, prolonged obstructions which the State has placed before us.

STATUS OF LITIGATION

On March 4, 1991, the U.S. Supreme Court denied the State of Nevada's petition for a writ of certiorari in which Nevada sought review of the unanimous decision of a panel of the Court of Appeals of the Ninth Circuit in the case of *Nevada* v. *Watkins* (S.Ct). In this case, Nevada challenged the constitutionality of the Nuclear Waste Policy Act, as amended, and the authority of the Secretary of Energy to proceed with the site characterization of Yucca Mountain. The Ninth Circuit Court held that Nevada's attempted "veto" of the Yucca Mountain site was invalid under the terms of the NWPA, and was preempted to the extent that it stood as an obstacle to the purposes and objectives of the NWPA.

The decision of the Supreme Court also facilitated procedural progress in *DOE* v. *Nevada* (D.Nev.), an action brought by the Department in the Federal District Court of Nevada to compel Nevada to process three environmental permits needed to proceed with site characterization at Yucca Mountain.

In a hearing on that case on March 20, 1991, the Judge directed that, by April 22, 1991, the parties were to submit a stipulation and proposed order which would provide that the three applications which are pending would be expeditiously processed in accordance with State law on the merits and would not be denied for any reason already disposed of by the Ninth Circuit Court.

In response to the Judge's direction, attorneys for the Department of Justice (DOJ) and DOE prepared a draft stipulation agreement containing specific timeframes for the processing of the three permits in full accord with the Court's order and the Judge's comments during the hearing. A copy of the transcript of the March 20 Court hearing is attached (Attachment A) for the record as is a copy of the DOJ/DOE draft stipulation (Attachment B). It is important to note that neither the Court order nor the agreement call for the approval or disapproval of the applications—merely the processing of them in accordance with prescribed State regulatory procedures and timeframes. The draft stipulation was delivered to the Nevada Attorney General on April 3.

On April 16, counsel for Nevada delivered the State's version of a stipulated agreement to DOJ/DOE attorneys. A copy is attached (Attachment C) for the record. Counsel for DOE determined the State's stipulation to be inadequate and objectionable for at least two key reasons: 1) the State refused to be bound to take final actions within the timeframes provided by State law and regulation, asserting only that the applications would be processed "expeditiously," and 2) the State's stipulation covered only two of the three permits at issue (air quality and underground injection) and ignored the third application dealing with water allocation which had also been covered by the Court's order. Since it was apparent there could be no mutually acceptable stipulation agreed to by both parties by the April 22 deadline imposed by the Court, both versions were returned to the Court on that date and counsel for DOE once again entered a motion for summary judgment and requested a Court Order that the State process all three permit applications within specific timeframes. The court scheduled a hearing for Monday, May 13, 1991 to attempt to reach resolution.

Subsequent to the Supreme Court's decision of March 4, and just days before the March 21 hearing before this Committee, the State offices responsible for processing these permits invited DOE to resubmit them for consideration. DOE complied immediately. Since the resubmission, however, the State has informed DOE that the applications are "incomplete" and considerable additional information will be required before processing can continue, even though no new information was requested by the State previously. There have been no further requests for additional information for the other two permit applications, at this date.

Mr. Chairman, in spite of the State's contention that they are proceeding "in good faith" and in accordance with Court decisions, the Department believes that such is not the case. By imposing continuous and unreasonable demands for additional information in order to "perfect" the applications, the State can drag out this process for months—if not years. And then, if the permits are denied, DOE will be forced to comply with the State's administrative procedures for appealing such denials and with the State judicial remedies in the Nevada courts—time-consuming ventures—before DOE could go back into Federal Court again.

It must be remembered these permits are only the first of about 15–20 required to complete the site characterization process over the next 7–8 years. Further the State has avowed its intention to "* * * exercise every power and every aspect of its inherent jurisdiction to frustrate the Federal program * * *", has demonstrated a history of delay and litigation, and could conceivably use such tactics to delay the program indefinitely into the future. [A list of the additional permits is attached (Attachment D).] In fact, at a hearing before the Senate Committee on Energy and Natural Resources on March 21, 1991, Nevada Governor Miller refused to assure the Committee that the State would no longer employ dilatory tactics to prevent the work at Yucca Mountain. And, just recently, at the International High-Level Radioactive Waste Management Conference in Las Vegas, Governor Miller indicated that Nevada's position on Yucca Mountain remains the same "* * * except for one thing: our resolve has stiffened."

The Department has made every effort, and continues to make every effort, to interact with the State in a responsible and responsive manner. Despite these efforts, the State of Nevada refuses to participate in key workshops and in public meetings held in the State to address public interests and concerns even though it accepts Federal grant funds to oversee our investigation in Nevada. As I stated in a March 29, 1991, letter to the Nevada Nuclear Waste Project Office, we believe that the State's independent oversight activities can make important contributions to the Yucca Mountain site characterization effort. With the State's independent efforts supplementing and complementing those of the Department, the prospect for an expeditious determination of the suitability of Yucca Mountain for a high-level radioactive waste repository is enhanced. I further indicated that we would like to work with Nevada in this regard. The State has not responded to this or any other like offer, and continues to spurn our efforts. The State has repeatedly refused to enter into discussions regarding consultation and cooperation agreements with the Department, as well as discussions concerning a benefits agreement which is authorized under the NWPA, as amended. This continued resistance by the State of Nevada to meaningful interaction with the Department not only diminishes our ability to resolve an important national issue, but also thwarts the will of the Congress of the United States.

NATIONAL ENERGY STRATEGY ACT (S. 570)

In order to attempt to expedite activities and be assured that future activities needed to evaluate the suitability of the Yucca Mountain site can proceed without undue State interference, DOE has submitted language relating to Yucca Mountain as part of the National Energy Strategy Act (S. 570). Section 511 of the legislation would allow DOE to conduct site characterization activities without the need to obtain permits from a State, a local government, or an Indian Tribe. DOE's obligation to follow environmental requirements would not be removed, however. Monitoring authority merely would shift from the State to appropriate agencies within the Executive Branch of the Federal Government. Also, the Department would be required to consider the views of States, local governments, and Indian Tribes regarding their laws affecting site characterization activities. Thus, our legislation would allow the essential access to the site while still ensuring that environmental and other applicable regulatory requirements are met. There is also a provision that would allow the State to regain its authority should it be willing to cooperate in good faith and enter into an agreement with the Department governing site characterization.

A key element of the National Energy Strategy (NES) is maintaining the nuclear energy option by removing undue regulatory and institutional barriers to nuclear power use. The NES identifies an important and growing role for nuclear energy as part of a balanced array of energy sources for meeting the Nation's energy needs, especially the growing demand for electricity. Clearly, an important ingredient to this growth is the ability to demonstrate greater progress in managing and disposing of the waste we already have. The principal obstacle to such progress is currently the continuing inability of DOE to undertake needed activities incidental to characterizing a candidate site for a potential geologic repository due to the actions of the State of Nevada. Until this impediment is removed, DOE will be unable to fully carry out its mandate to find an appropriate way to deal with the Nation's growing accumulation of high-level radioactive waste in a timely manner, and the potential for the continuing development of nuclear power identified in the NES may not be realized. Hence, we believe the proposed legislation is not only needed and justified, but it is the appropriate approach to solving an important national problem and safeguarding the future of nuclear power.

IMPORTANCE OF DATA COLLECTION

The site at Yucca Mountain, Nevada, has not been selected for the Nation's first nuclear waste repository—the site only has been designated for scientific investigation to assess its suitability for a repository. Nevada's adamant refusal to allow site evaluations to be conducted in order to gather the data needed to determine suitability is unreasonable. Scientists from the National Academy of Sciences, the Nuclear Waste Technical Review Board, as well as the Department of Energy, disagree with the State and believe that the collection of additional scientific data is required in order to determine whether or not Yucca Mountain is suitable for emplacement of spent nuclear fuel and high-level radioactive waste.

MANAGEMENT INITIATIVES

Over the last year, I have taken a number of management initiatives to increase the program's effectiveness and efficiency in accomplishing its mission. These initiatives include reorganizing the Office of Civilian Radioactive Waste Management to improve accountability, responsibility, authority, and incentive for the program and its contractors. The new project-oriented organization replaces the former matrix organization, which had been more generally geared toward site selection, and emphasizes lines of direct accountability which are geared toward implementing the Congressional mandates contained in the Nuclear Waste Policy Amendments Act of 1987.

As part of the basis for implementing the new reorganization, I have established the Management Systems Improvement Strategy (MSIS). The MSIS involves a planning and implementation approach based on systems engineering principles. Its purpose is to improve management structure and procedures, to introduce top-down structure and traceability in the program, and to provide the basis for total program integration.

A third management initiative has been to critically analyze the program's existing contractor support to ensure its effectiveness in supporting the site characterization effort before us, ensure thorough integration of all program elements, and eliminate any redundancy. As part of this effort, DOE has awarded a Management and Operating (M&O) contract to TRW Environmental Safety Systems for systems engineering, development, and management support of the high-level radioactive waste management system. The negotiations and award of this contract were in accordance with the August 1989 ruling of the U.S. Claims Court. We are also continuing our efforts to consolidate the remaining contractor efforts supporting our program.

EXTERNAL COMMUNICATIONS

I have taken steps to increase the effectiveness of our external outreach and communication, especially with interested and affected parties. One example is the series of strategic principles workshops recently held to receive predecisional input on ways in which we can best implement our mission. The first of these meetings was held in Salt Lake City last December; the second was held in Washington, D.C., this January; and the third was held in Denver, Colorado, in April. The results of these meetings are being incorporated into the Mission Plan Amendment, which will be issued later this year.

We have had continuing dialogue with the utility industry to prepare for waste acceptance in 1998. We have had extensive interaction with Nye County, Nevada, and have signed protocols for future interactions. In addition, realizing how vital to our success is the development and dissemination of accessible technical information to inform and educate the public, we have instituted a number of education and information initiatives. These include training programs for teachers, students, and scientists; development of curricula for use in public schools; participation in international education seminars focused on furthering the development of information and educational materials; support for independent research related to OCRWM's mission through the historically Black Colleges and Universities program; and continued support to graduate level student's through the Waste Management Fellowship program. We have placed a high priority on strengthening and expanding these programs. Our initiatives reflect the emphasis of both President Bush and Admiral Watkins in strongly endorsing efforts to increase science and math literacy in this country.

READINESS TO BEGIN SCIENTIFIC INVESTIGATIONS

This past year, I directed a number of activities to ensure that the program is fully ready to initiate new scientific investigations activities. One such activity on which I have placed great emphasis is prioritizing our data acquisition strategy to ensure that we get the crucial information needed to prove whether the Yucca Mountain site is suitable or unsuitable as early in the site characterization process as possible. Not only has this been a priority of mine since I came to the program, but it also responds to concerns expressed by the State of Nevada, the National Academy of Sciences, the Nuclear Waste Technical Review Board and the utility industry that our program must be oriented to identify indicators of suitability or disqualification as soon as possible. Drawing from the very comprehensive site characterization program presented in the Site Characterization Plan for Yucca Mountain, we are identifying those activities which should be done on a priority basis. Among the top priority activities are trenching in Midway Valley to determine its stability and suitability for surface facilities, and deepening the existing Trench 14 to determine the age and origin of the controversial calcite silica deposits. We have completed study plans needed for Midway Valley and Trench 14 activities and they have been approved by the Nuclear Regulatory Commission (NRC).

In addition, prior to initiating any new site characterization activities, DOE must develop a quality assurance (QA) program meeting the requirements of NRC for that activity, and must receive NRC's acceptance of that program. I might note that this requirement is unique to this program in DOE, and that it applies also to each of our major program participants. To ensure that our current operation is in conformance with the requirements of NRC, we conducted quality assurance audits at Headquarters, and at the Yucca Mountain Site Characterization Project Office, during October 15–31, 1990. Based on that audit, we requested NRC's acceptance of the OCRWM QA program related to new site characterization activities associated with Midway Valley trenching and Trench 14 calcite silica studies. NRC has notified us that these portions of the program are acceptable. In addition, nine of the project participants have been audited and received conditional letters of acceptance. As a result of this acceptance, we took another step toward readiness to initiate new activities at Midway Valley and Trench 14.

We have also moved forward in the area of prototype testing and development to ensure that all necessary equipment, instruments, and procedures are available to conduct testing. This is a crucial element of the program, as many of the aspects of our extremely thorough testing program have never been tried or accomplished to this degree of exactness and reproducibility before. We have succeeded in all of these areas and are fully ready to begin new testing in Midway Valley and Trench 14.

Last February 7, I visited the Yucca Mountain Site Characterization Project Office and personally confirmed, for myself and the Secretary, our readiness to proceed with new surface-disturbing site evaluation activities. There remains, however, one obstacle to our carrying out the 1987 mandate of Congress and starting new testing at Yucca Mountain—that continues to be, as it was at this time last year, the unrelenting obstruction by the State of Nevada.

As it appears that the State intends to litigate on each and every permit application, and indeed has warned that it has lawsuits on the shelf ready for filing, it is obvious that the program could be delayed for many years. As Secretary Watkins has previously stated, unless the State of Nevada changes its posture, we believe that legislative action is now necessary to fulfill our Congressional mandate and move forward with activities necessary to determine whether or not the Yucca Mountain site is suitable for development as a potential repository.

BUDGET OVERVIEW

With this background in mind, let me now discuss with you our FY 1992 budget request. To carry out our responsibilities under the Nuclear Waste Policy Act, as amended, and based on the restructured program and scientific investigation plans, DOE is requesting $305.1 million from the Nuclear Waste Fund, which is funded through fees paid by nuclear-generating utilities (Table 1). Also, $0.7 million is requested from the General Fund under the Civilian Radioactive Waste Research and Development (R&D) program. The $305.1 million request from the Nuclear Waste Fund compares to $242.8 million appropriated in FY 1991, and the $0.7 million request for Civilian Radioactive Waste R&D programs is the same amount as was appropriated in FY 1991.

TABLF 1

DEPARTMENT OF ENERGY
FY 1992 CONGRESSIONAL BUDGET REQUEST
NUCLEAR WASTE FUND
(dollars in thousands)

LEAD TABLE

Nuclear Waste Fund

Activity	FY 1990 Enacted	FY 1991 Enacted	FY 1992 Base	FY 1992 Request	Program Change Request vs Base: Dollar	Program Change Request vs Base: Percent	FY 1993 a/ Request	FY 1994 a/ Request
First Repository								
Operating Expenses	$ 175,685	$ 154,180	$ 154,180	$ 170,241	$ +16,061	+10%	$ 161,666	$ 175,355
Capital Equipment	2,131	1,000	1,000	2,000	+1,000	+100%	18,343	12,433
Subtotal, First Repository	$ 177,816	$ 155,180	$ 155,180	$ 172,241	$ +17,061	+11%	$ 180,009	$ 187,788
Monitored Retrievable Storage								
Operating Expenses	$ 3,000	$ 8,797	$ 8,797	$ 32,225	$ +23,428	+266%	$ 33,494	$ 34,773
Construction	0	0	0	0	0	0%	0	0
Subtotal, Monitored Retrievable Storage	$ 3,000	$ 8,797	$ 8,797	$ 32,225	$ +23,428	+266%	$ 33,494	$ 34,773
Transportation, Systems Integration, and Engineering Development								
Operating Expenses	$ 22,000	$ 27,483	$ 27,483	$ 38,851	$ +11,368	+41%	$ 40,381	$ 41,904
Capital Equipment	0	0	0	0	0	0%	0	0
Construction	0	0	0	0	0	0%	0	0
Subtotal, Transportation, Systems Integration, and Engineering Development	$ 22,000	$ 27,483	$ 27,483	$ 38,851	$ +11,368	+41%	$ 40,381	$ 41,904
Program Management and Technical Support								
Operating Expenses	$ 65,240	$ 51,173	$ 51,173	$ 61,554	$ +10,381	+20%	$ 63,004	$ 64,536
Capital Equipment	0	200	200	200	0	0%	200	200
Subtotal, Program Management and Technical Support	$ 65,240	$ 51,373	$ 51,373	$ 61,754	$ +10,381	+20%	$ 63,204	$ 64,736

LEAD TABLE - Nuclear Waste Fund (cont'd)
Nuclear Regulatory Commission

Fees								
Operating Expenses	$ 27,100	$ 0	$ 0	$ 0	$ 0	0%	$ 0	$ 0
TOTAL	$ 295,156	$ 242,833	$ 242,833	$ 305,071	$ +62,238	+26%	$ 317,000	$ 329,201
Summary								
Operating Expenses	$ 293,025	$ 241,633	$ 241,633	$ 302,871	$ +61,238	+25%	$ 306,657	$ 316,508
Capital Equipment	2,131	1,200	1,200	2,200	+1,000	+83%	10,343	12,693
Construction	0	0	0	0	0	0%	0	0
Total Program	$ 295,156 b/	$ 242,833	$ 242,833	$ 305,071 c/	$ +62,238	+26%	$ 317,000 a/	$ 329,201 c
Staffing (FTE's)	244	251	251	271			271	271

Authorizations:
P.L. 83-703, "Atomic Energy Act of 1954"
P.L. 97-425, "Nuclear Waste Policy Act of 1982"
P.L. 100-203, "Nuclear Waste Policy Amendments Act of 1987"

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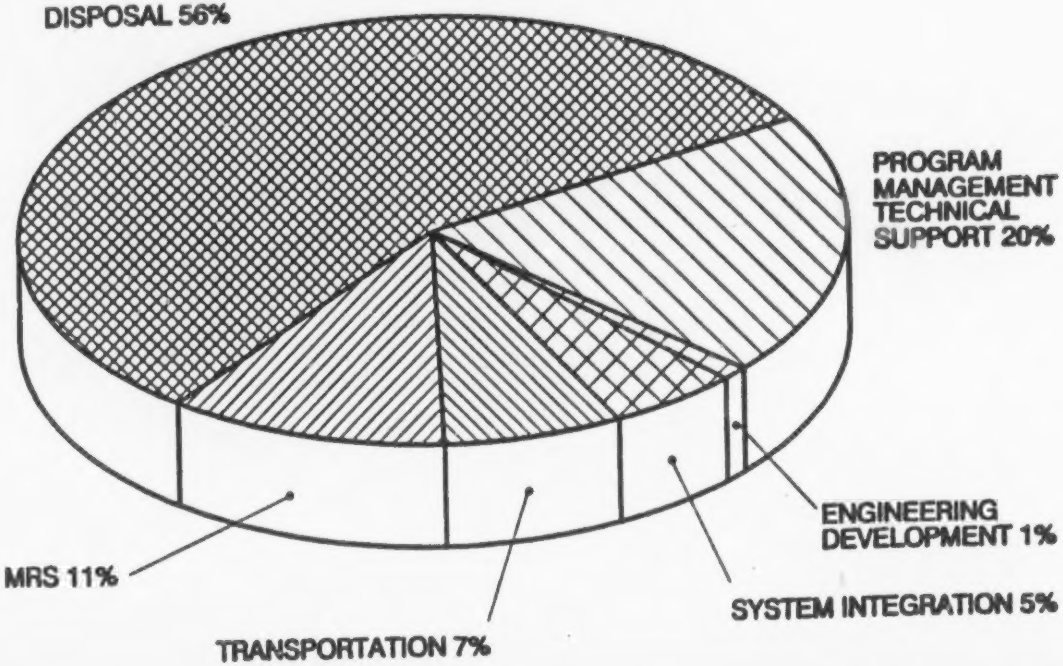
a/ These funding levels reflect a continuation of current Program activity, recognizing that repository environmental permits remain unavailable and no MRS sit
has yet been identified. Program budget levels will be reexamined when this situation changes.
b/ FY 1990 reflects final Gramm-Rudman-Hollings sequester adjustments and P.L. 101-164 reductions to fund anti-drug activities.
c/ Reflects savings resulting from proposed Davis-Bacon Amendment.

FIGURE 1
OCRWM PROGRAM
BUDGET ALLOCATION



The FY 1992 budget request is designed to implement the program restructuring which resulted from the Secretary's comprehensive review of the radioactive waste management activities and schedules. A major emphasis of the program's efforts will be on completing an integrated array of near-term milestones relating to MRS and transportation, and conducting scientific investigations designed to support a determination, as early in the process as possible, whether or not the Yucca Mountain site is suitable for development as a potential repository.

FIRST REPOSITORY

For repository-related activities during FY 1992, DOE is requesting $170.2 million, plus $2.0 million for capital equipment. This corresponds with $155.2 million appropriated in FY 1991. Currently, about 56 percent of our proposed budget (see Figure 1) is allocated to Yucca Mountain activities.

Major ongoing activities to be continued at Yucca Mountain during FY 1992 include monitoring and investigative activities in geology, hydrology, seismology, geochemistry, climatology, volcanic processes and events, and geochronology studies. These activities obtain time-dependent data which are essential for regulatory compliance and would otherwise be lost. Trenching of Midway Valley and expanded studies of calcite silica deposits in Trench 14 will begin.

During FY 1992, we will continue to participate in international scientific activities such as INTRAVAL and GEOVAL, and the Organization for Economic Cooperation and Development/Nuclear Energy Agency education conferences. OCRWM also plans to sponsor a third International High-Level Waste Management Conference in Las Vegas, Nevada. (The first such conference was held in April 1990, and the second was held last month.)

As a high priority, we will continue efforts aimed at increasing science, mathematics, and engineering literacy, such as technical information transfer and educational initiatives. These include continuing programs in waste management technologies at the University of Nevada-Reno, efforts in developing waste management curricula to be taught in public schools nationwide, teacher training programs, and student participation workshops. In addition, we will continue to sponsor new research through the Historically Black Colleges and Universities Program, and to support graduate education in waste management through the Waste Management Fellowship Program.

MONITORED RETRIEVABLE STORAGE

The Nuclear Waste Policy Act, as amended, authorizes the construction of an MRS facility, which is essential to an efficient, integrated waste management system and to our ability to begin accepting waste in 1998. The FY 1992 budget request for the MRS is $32.2 million. That constitutes about 11 percent of our total budget request and compares with $8.8 million appropriated in FY 1991.

In the regulatory and institutional area during FY 1992, DOE will continue to prepare required reports, such as Environmental Monitoring and Mitigation Progress reports, Environmental Protection Implementation Plans, and Programmatic Agreement Annual Reports. Activities necessary to ensure a fully approved quality assurance program will continue and full implementation of the required Quality Concerns Program will begin. The permit tracking system will be maintained and existing permits or permit applications will be updated as necessary. The two Nevada information offices, located in Beatty and Las Vegas, will continue to be operated, and a series of Project update meetings will be held. In addition, prerequisite environmental monitoring will continue. We will continue to support interactions with the State of Nevada, affected units of local government, the Nuclear Waste Technical Review Board, the Advisory Committee on Nuclear Waste, and others as appropriate. Also, we will continue support for the payment-equal-to-taxes program and will complete required Site Characterization Semiannual Progress Reports.

In the area of the exploratory studies facility (ESF) design, we will continue the Title II design for ESF surface and subsurface facilities, and complete the design for site preparation, surface buildings, utilities and communication systems, as well as the design of ESF first-phase structures and equipment. We will initiate planning and procurement for long-lead procurement items and construction equipment and begin site preparation construction activities. A full-services Field Operations Center will be established to prepare for the start of intensive site investigation and ESF construction.

During FY 1992, we will provide support to the Nuclear Waste Negotiator as he may request. We will also complete Title I MRS design activities, including completion of trade-off and optimization studies. We will continue to interact with NRC in pre-licensing meetings in order to begin preparation of the license application, and we will prepare necessary permit applications. A comprehensive quality assurance program will be developed and implemented to assure that all aspects of the work are conducted effectively and efficiently and that NRC regulatory requirements are met. It is our expectation that the Negotiator will be successful in his efforts to site an MRS facility, and the MRS facility will start operations in 1998.

TRANSPORTATION, SYSTEMS INTEGRATION, AND ENGINEERING DEVELOPMENT

The areas of transportation, systems integration and engineering development are similar in that they each cover responsibilities that cut across OCRWM program elements and components of the waste management system. They, therefore, require integration of effort and of technological and institutional components. The effective development and functioning of these responsibilities is necessary to ensure safety, efficiency, reliability, cost effectiveness, and schedule maintenance in the Civilian Radioactive Waste Management Program.

The FY 1992 request for activities related to transportation, systems integration and engineering development is $38.9 million. This compares with $27.5 million appropriated in FY 1991. A breakdown and further discussion of each of these program responsibilities is as follows:

TRANSPORTATION

The objective of the OCRWM transportation program is to ensure that a safe, environmentally acceptable, and cost-effective transportation system is in place when needed to support facility operations. In developing this system, we will utilize private and public sector participants to the fullest extent possible.

In addition, we will complete and submit the safety analysis report for packaging to NRC in order to obtain NRC certification of the legal-weight truck cask design and rail-barge cask design.

For FY 1992, DOE is requesting $21.4 million for transportation-related activities. This constitutes about 7 percent of our total budget request and compares to $17.1 million that was appropriated in FY 1991.

During FY 1992, we will continue to conduct engineering, drop, and design verification tests as appropriate. We will also continue development of material and component technology to support cask designs. We will continue cooperative agreements with various national, regional and local groups, and continue to distribute public information materials. In addition, we will support MRS Environmental Assessment transportation analyses.

SYSTEM INTEGRATION

The objective of the Systems Integration activity is to ensure that the various components of the waste management system are integrated into a single system that is safe, efficient, reliable, cost-effective, and on schedule. The approach to accomplishing this objective is to identify and baseline technical requirements of the total system; maintain current descriptions of the system, its components, and interfaces that meet requirements; enhance communication among parties responsible for individual system components and functions; develop and maintain a capability to fully assess alternative concepts; conduct system studies and recommend improvements; and support development of equipment and processes having the potential to improve the system.

During FY 1992, we are requesting $15.0 million for Systems Integration activities, as compared with $7.0 million appropriated in FY 1991. This constitutes about 5 percent of our total budget request.

Systems integration activities to be conducted during FY 1992 include providing programwide configuration management and change control functions; supporting utility contract modification and strategy development; maintaining and supporting the configuration management system; updating the system data base to include waste inventories, reactor capabilities, and waste characteristics; and continuing QA efforts, including QA plan reviews, assessments, surveillance and audit activities. In addition, we will continue to update our capabilities for calculations involving waste streams, operations/logistics, cost, radioactive materials and potential radiation dose.

ENGINEERING DEVELOPMENT

The Engineering Development program develops and demonstrates cross-cutting technologies required in a waste management system. One such cross-cutting technology is the process to consolidate spent nuclear fuel assemblies on a production line basis to meet the annual throughput of an MRS or a geologic repository. Another such technology is development of alternative dry storage concepts for spent nuclear fuel.

For FY 1992, we are requesting $2.5 million for engineering development. This constitutes approximately 1 percent of our total budget request and compares with $3.4 million appropriated in FY 1991. The main activities to be conducted in this area are completion of hardware procurements, and completion of storage pool modifications for storage of spent fuel assemblies at West Valley, New York.

PROGRAM AND TECHNICAL SUPPORT

The activities detailed under this program element include program management (salaries, benefits, and travel), contractual services, and technical support. During FY 1992, we are requesting $61.8 million. This represents approximately 20 percent of our total budget and compares with $51.4 million appropriated during FY 1991. This level will support staffing of 271 full-time equivalents, which include:

Headquarters OCRWM (including Yucca Mountain)	227
Other field	24
Headquarters matrix	20

The requested funding will also support activities to provide program-wide technical support in audit, fee verification, data collection, and analysis. It will fund Waste Management Fellowship and Historically Black Colleges and Universities Programs, as well as fund external relations and outreach, and public involvement. It will provide funds to support Cooperative Agreements with the National Academy of Sciences, and will fund continued interactions with the National Congress of American Indians, the National Conference of State Legislatures, and Quality Assurance oversight. Finally, it will fund international programs, strategic and contingency planning, and support the Information Resource Management System.

NUCLEAR WASTE FUND

The Nuclear Waste Fund (NWF) was established in FY 1983 under sections 111 and 302 of the Nuclear Waste Policy Act of 1982 (NWPA). According to section 111 of the NWPA, the NWF is "composed of payments made by generators and owners of waste and spent fuel, that will ensure that the costs of carrying out activities relating to the disposal of such waste and spent fuel will be borne by the companies responsible for generating such waste and spent fuel. * * *"

Through December 31, 1990, fees collected and interest earned on investments have totaled $5.7 billion. Expenditures include $1.2 billion for activities associated with Yucca Mountain-related studies, $81.1 million for NRC oversight, $48.2 million for MRS activities, $197 million for transportation and systems and $93.5 million for grants provided to affected States and Indian Tribes. $1.1 billion was spent on the Basalt Waste Isolation Project and the Salt Repository Project that were terminated. A total of $2.7 billion remains in the Fund and is invested in U.S. Treasury Securities.

The NWF financial statements have been audited by an independent accounting firm since the inception of the program. A copy of the FY 1990 financial statement which shows a more detailed breakdown of cumulative revenues earned and accrued costs of the program since inception of the NWF is included in the latest OCRWM Annual Report.

CIVILIAN RADIOACTIVE WASTE R&D

The goal of the Civilian Radioactive Waste R&D program is to encourage and expedite the development and demonstration of new technologies for more efficient onsite storage of spent fuel. This will permit the orderly continuation of electricity generation operations by the utilities prior to the availability of Federal storage and disposal facilities. The Civilian Waste R&D program is not funded out of the Nuclear Waste Fund, but instead, from the General Fund.

During FY 1992, we are requesting $700,000, the same amount as was appropriated in FY 1991. Activities to be conducted include generic research and development studies, spent fuel storage development, cooperative information exchanges with Non-Nuclear Weapons States, and program direction.

Mr. Chairman, this concludes my remarks.

NUCLEAR WASTE FUND

Senator JOHNSTON. Thank you very much, Mr. Peters. I have no further questions. Senator Reid—and we will have some questions in writing for both witnesses.

Senator REID. Senator Johnston, you and I have danced this tune for years, and I do not think this is the appropriate place to continue the dance. We have a basic disagreement.

I, too, do not want to look my sons in the eye and say this Senator failed. And so we have a basic disagreement. Senator Johnston and I are going to try to approach it as gentlemen and see if we cannot work something out.

Senator JOHNSTON. Thank you very much, Senator Reid.

Senator Domenici?

ENVIRONMENTAL RESTORATION IN WASTE MANAGEMENT

Senator DOMENICI. I have no questions, either. I would like to say to Mr. Duffy, if we are finished with this part of the hearing, I recall vividly when you started this program and visitations to my office, and they probably were not any different than visitations to others. And I know from time to time you feel very frustrated. You have not vented that much too much here today. You look well. In fact, very hardy.

But I want to say that I think when you consider where you started and where you are in spite of the difficulties; in some areas things did not work exactly as you planned. But I think you are coming along. I think things are moving very positively.

This is a big undertaking and very complex. And as you have probably found out, emotional and political beyond anything else around. But frankly, so long as we can keep moving ahead as you have been, I really believe we are on the right track. And I compliment you and those people working for you for that.

Mr. DUFFY. Thank you, Senator. It has been a hard job for most of them. They work long hours.

Senator DOMENICI. And a lot of them get blamed for things they are not responsible for, and we understand that. I just hope they understand that they are in a get-blamed mode; there is nobody else to blame.

Senator REID. Senator Domenici, since you raised the issue, I was going to sit here and be quiet this afternoon, but I just do not want it left unsaid. The theory that is being propounded here, that is, that the Federal Government will simply overrun a State's rights, if the States do not like what the Federal Government is doing.

I think the concept being propounded in the testimony that you rendered and in the legislation that you asked to be enacted is the exact opposite of what our federal system of government stands for.

And again I am not going to belabor the point here, other than to say that I have actually run a few marathons in my life, and I think I can run another one. This is not going to be something that is going to be as easy as some bureaucrats think it is going to be.

Senator DOMENICI. I was not really addressing that issue, and if I did I should not have. I really was talking about the multiyear research and development program for waste that is around the country already, and we are going to try to clean up, and the cleanup that is occurring. I was not talking about the area that the distinguished Senator, and I tried very hard not to talk about that, whether we agree or disagree.

But I still compliment you for the part, if I was talking about Nevada, I did not intend to. I would let these two people do that for a while.

FEDERAL GOVERNMENT RESPONSIBILITIES

Senator JOHNSTON. Well, without talking about Nevada, there are certain responsibilities that the Federal Government has. The Clean Air Act, for example, and no matter how you voted on it, but I happened to have supported that, and I think Federal standards, Federal bureaucrats, if you will, to have responsibility for uniform standards throughout the country, Clean Water Act, section 404 permits for wetlands, which I frequently disagree with how they do it.

But I think there is some responsibilities that the Federal Government has, because first, they ought to be uniform through the country; second, because the Federal Government with its combined resources and its greater ability to incur deficits, has more money to deal with the problems. And in this case I think they have done a good job of helping to incur deficits.

ENVIRONMENTAL RESTORATION AND WASTE MANAGEMENT

You know, Mr. Duffy, you are really going into the lion's den in your new job. I despair about the problem, though, because I fear that it is such a big problem—defense plants—that it is kind of beyond the ability to do. And I feel it is going to be a little bit like Superfund. A lot of money, a lot of paper, and no cleanup. I hope that is not so.

I know it is enormously difficult to characterize the problems and to categorize them and to evaluate them, and to come up with a plan, to put the plan in action, and to pay for it. And I know how difficult that is. But as I look at nuclear waste, for example, we have spent enormous amounts of money and we still do not have nuclear waste in the ground.

I know this year that there is a budget request for design of the MRS. You know, our original act in 1984 required that the DOE come forward with a design within 1 year. Now, since then we have legislated on that, and here we are in 1991, and we are just now getting the budget request to do what was supposed to have been done over 6 years ago.

So I am frustrated about this, the potential for waste—and I am not talking about nuclear waste, I am talking about money waste—is so enormous in these fields. It just absolutely boggles the mind.

You can have a $600 coffeemaker, and the whole country comes to attention and everybody knows about that. But you can waste billions, literally billions, millions at a time, in this waste management program, and it is beyond the capacity of people to understand it. And as long as it is going to some contractor and there is paper involved and permits, and they say, "Well, we cannot do that now," because of this regulation or that regulation, the public does not seem to notice because they do not understand it.

And so I guess this thing can continue to go on, billions and billions of dollars into the future, and nobody will notice. But some of us do notice and are frustrated— not with you, I mean, with the scope and inability to get an understanding of the costs and plan to solve the problem.

POTENTIAL FOR FRAUD AND ABUSE AT CLEANUP SITES

Mr. DUFFY. We are very sensitive to that. And I have to admit, since we came on board we have found areas where we felt that $50 million was wasted in previous operations on pondcrete at Rocky Flats. I think Congressman Synar said it was $114 million, but we found it to be $50 million.

We have some problems at Oak Ridge, where material that was solidified in 1985 or 1986 was supposed to last and be acceptable under the RCRA laws, is now going to have to be redone. And that is due to inefficient quality assurance. I mean, that is not a complicated brain surgery operation; this is pouring concrete. And we found these kind of operations.

But the IG has got us as the No. 1 guy on his list for potential fraud and abuse because we are growing in leaps and bounds. We felt that we needed an external review of what we are doing, and that is why I called in the Corps of Engineers and we called in the State of Washington to come and look at what we were doing, because we need all the help we can get.

STAFFING REQUIREMENTS

Senator JOHNSTON. Well, do you need more help now?

Mr. DUFFY. Oh, yes; we went from 59 people in 1989 to approximately 259 at headquarters. And we have now 600 people in the field. The first 12 tiger teams that went out to the various organizations found the major deficiency was in the environmental restoration and waste management area. We filled a lot of billets with people with good experience in the State area.

That is unfortunate for the States. But before Senator Domenici came in, we did identify the number of compliance agreements. Many of those are in the States where we have interagency agreements. We are financing the oversight of the operations in each one of our facilities for the States, and we now have them on site.

And, unfortunately, we are recruiting from the States because we pay higher than the States. And then industry pays higher than we do. So they recruit from us, and it is a never-ending cycle. But we do have some real good people that have come into the organization. And they are dedicated and they are looking at getting a better bang for the buck.

Senator JOHNSTON. Well, I do not know how many people you need, but I know that success is not necessarily dependent upon the number of people you have.

Mr. DUFFY. No; it is the quality of the ones you have.

Senator JOHNSTON. I hope we do not get into a situation where people just simply try to perpetuate themselves in office.

Mr. DUFFY. I hope not.

Senator JOHNSTON. We have seen that a good bit. I remember in the Department of Energy in the ERA, which used to oversee violations of the crude oil program. I asked them when they were going to finish, because the crude oil program was over in 1980. I think it was 1983, about 3 years later, I asked them, and they said, "Oh we are going to be finished with all those within the year."

And 10 years later they were still processing claims and going to the newspaper and saying we are saving all this money. And what happened was a lot of those people wanted to keep their jobs until they just kept the work going.

Now, I do not think that is a problem with you, but I do know that we have spent how many billions of dollars on nuclear waste now? Civilian nuclear waste programs?

Mr. PETERS. On the civilian side we have expended about $3 billion.

Senator JOHNSTON. And we do not even have a hole in the ground yet. Now, I know there are reasons for that, I guess. But I can tell you that they are not satisfactory reasons as far as I am concerned, because I think $3 billion is a lot of anybody's money.

And it is not your fault. You are fairly new to the program. And it is not the Director's fault; he is fairly new to the program. But something is wrong somewhere, and maybe it is us, part of it, and I am sure it is.

Senator REID. Would the chairman yield for a brief comment?

Senator JOHNSTON. Yes.

SITE PERMITS

Senator REID. I think it should be worth mentioning here that your statement lays out what the courts have ruled in recent months. And I always understand, or try to understand, what the courts say. But I think one of the things we have to appreciate here is if, in fact, these permits are going to be processed, as has been directed by the court, and the Governor of the State and others have said that would be the fact. In fact, Governor Miller was here and said that he would make sure that they were processed.

I think one of the things we have to keep in mind is that the State of Nevada is a very tiny little State, and I think that Admiral Watkins and others should stick by what Watkins said initially that he would make sure the State had enough money to do all of the things they needed to do with the things nuclear.

I just wanted to mention that, because this is a funding committee, and the State is desperate for the money to process these permits and do other things related to that nuclear waste repository.

PREPARED QUESTIONS SUBMITTED FOR THE RECORD

Senator JOHNSTON. Now, I understand Senator Hatfield has some questions which I will include, along with the additional questions prepared by the subcommittee staff, for your response.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR JOHNSTON

Public Trust in DOE Cleanup and Restoration Activities

Question: How would you characterize the public's trust in the Department of Energy's ability to efficiently and effectively carryout the clean up and restoration of the DOE complex?

Answer: The public's trust in our ability to clean up the DOE complex and various contaminated areas, resulting from past Department activities, is improving. The Department has adopted an aggressive self-assessment role and reorganized program efforts for the purpose of emphasizing its accountability for environmental protection and cleanup.

The Environmental Restoration and Waste Management Five-Year Plan was first issued in August 1989, and then followed in June 1990 by the current Five-Year Plan. This document has increased the public's awareness of Department activities and helped to better inform them of our plans and accomplishments. DOE has taken steps to increase public involvement in the Plan's formulation and review. In August 1990, DOE convened a Stakeholder Forum to broaden the range of public involvement. The Forum provided helpful information and insight regarding DOE's environmental program and the Five-Year Plan. DOE intends to provide similar opportunities for public involvement at the State and local levels. Through openness and cooperation, DOE hopes to make its environmental program more responsive to public concerns and better able to meet its primary objectives of protecting public health and safety and the environment.

Question: How relevant is the 5-Year Plan to actual program execution?

Answer: The Five-Year Plan (FYP) drives actual program execution and is integral to DOE's success in site cleanup. EM is putting mechanisms in place to assure that its planning efforts are reflected in budgeting and program decisions. At the Activity Data Sheet (ADS) level, the FYP forms the basis of EM's budget formulation efforts. In short, activities covered by the FYP are budgeted for, and then executed. EM is developing systematic methods for tracking the relationship among plans, budgets and program execution. A management tracking system, expected to be operational in October 1991, will track program progress against scheduled milestones. In addition to serving as a tool for management to track program performance, the system will assure that priorities established in the planning process are reflected in program execution. By tracking progress, it will also be possible to revise program plans accordingly.

Prioritization Process

Question: What process and procedures does DOE go through to set priorities and what is your experience in following those priorities?

Answer: For the development of the FY 1991 and FY 1992 Office of Environmental Restoration and Waste Management budget requests, a four tiered priority system was used. Priority 1 included activities necessary to prevent near-term adverse impacts on workers, the public, or the environment. Priority 2 items encompassed those activities required to meet the terms of agreements between DOE and local, State, and Federal agencies. Priority 3 included activities required for compliance with external environmental regulations that are not covered in Priority 1 or 2. Priority 4 included activities that are not required by regulators but that would be desirable. For development of the FY 1993 budget, each of the line organizations within the Office, i.e., Environmental Restoration, Waste Operations and Technology Development, have been developing priority systems specific to their programs. The priority systems are useful decision aiding tools to help the Department effectively allocate its resources. Further, DOE is participating in a dialogue, under an EPA initiative with other Federal agencies, on setting priorities. The purpose of this effort is to seek a consensus among Federal agencies, states, citizen groups and Indian tribes on setting national priorities for cleaning up Federal Facilities. External involvement in the development of the priority systems is essential if we expect to have them accepted by the public. External coordination does require additional time, but it is an invaluable part of the process. Public participation has been achieved through a series of meetings and specific groups established to assist in this process for future priority system applications.

Management of Environmental Restoration Activities

Question: In light of ~~recent~~ events at Savannah River, why is it reasonable to think that the Department of Energy can manage, in an effective way, the environmental restoration and waste cleanup effort?

Answer: The Secretary has taken immediate steps, in response to improper financial management practices at Savannah River. Specifically, the Secretary has directed each of the DOE Field Office Managers and the Rocky Flats Office Manager to review their ongoing construction and General Plant Project activities. Additionally, they are to provide an explanation of project monitoring systems including the change control approval process, frequency of status reports/ briefings, adequacy of cost accounting, and performance measurement systems. I, as a Headquarters Manager, have been directed to assure objective independent project oversight on a frequent basis, so that we can identify problems early and solve them properly.

Moreover, over the past year both the Department as a whole, and EM in particular have put in place a number of initiatives to better control costs and improve the cost estimating process. On the Departmental level, the Office of the Controller has led a number of budget "Tiger Team" inspections to identify DOE's overall problems in the budget formulation area. The Controller has another initiative underway to improve Departmental cost estimating capability through evaluation of indirect labor rates appropriate to environmental restoration type activities. Finally, the Secretary has directed the Office of Procurement to form a special in-house team to study the business management practices of the Management and Operating (M&O) contractors and laboratories.

Within EM, cost control oversight efforts are focused in the recently formed Office of Quality Assurance and Quality Control and line organizations which continually conduct reviews of the effectiveness of our cost control practices. This office and the program line organizations are currently in the process of performing a joint validation of the cost estimates used to develop the 1993-1997 Five-Year Plan. We also use the expertise of activities outside the Department to help us in our cost control efforts. The EM staff is a participant in an Interagency Task Group on Hazardous, Toxic, and Radioactive Waste Cost Estimating which provides a forum for information sharing and mutual problem solving. Our efforts in the cost and budget area are aimed at one target -- controlling the cost of program growth and ensuring the wise use of appropriated funds.

It should also be noted that EPA, in conjunction with OMB and other Federal agencies, is making improvements to the A-106 budget planning process that requires Federal agencies to submit cost estimates to OMB, after review by EPA, for meeting requirements of environmental laws. The A-106 process should be helpful in improving budget planning and cost estimation.

Question: Is the Department operating from a position of strength in dealing with State and local interests?

Answer: The Department shares the interests of States and localities in effective environmental restoration and waste management of DOE sites. Information is continuously exchanged among representatives from DOE, States hosting DOE facilities, local governments and other groups to assure that each is aware of the concerns and activities of the others, so that shared interests may best be served.

It should be noted, however, that the Department is also pursuing certain objectives that have national application. The most notable of such objectives are the use of risk-based prioritization of cleanup and compliance activities, and achieving consistency, as appropriate, in general provisions and terms of cleanup and compliance agreements. The States' ability to interpret regulations as they deem most appropriate often give the States considerable leverage in their dealings with the Department.

Justification of Departmental Cleanup Efforts

Question: In your judgement, is the Department of Energy (DOE) engaged in any clean up work that is not justified based on technical or cost considerations. If so, please provide a brief explanation of each case.

Answer: The Department has identified several instances where compliance with existing regulatory requirements or guidance has or would result in activities that are not (1) cost effective or (2) technically well founded. Examples of these situations are provided below.

1. Not Cost Effective - activities which do not lead to appreciable hazard reduction for the resources spent:

Regulators have required that the Department perform studies to back-fit paperwork to comply with regulations when a project is in an advanced planning stage. For example, a Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Primary Assessment/Sight Investigation (PA/SI) was required for the Niagara Falls Storage Site (NFSS), after the Environmental Impact Statement (EIS) and Record of Decision (ROD) were complete and the remediation nearly complete. The information was already available in the EIS/ROD, but another report in a prescribed format was required.

Clean Air Act permit applications for Hanford projects have included Best Available Radionuclide Control Technology (BARCT) analyses that discount tritium control due to the high cost for minimal benefit ($1.6 billion/mrem reduction).

Washington State Department of Ecology has requested that tritium control be included.

Environmental Protection Agency (EPA) has required that work plans be written for work already completed prior to EPA involvement. These involved the Lawrence Livermore National Laboratory (LLNL) Main Site source investigations. EPA has required rework of investigation documents to put them in a "CERCLA" format. No material change in the remediation resulted. EPA believed these actions were required by CERCLA.

2. Not Technically Well Founded - activities which are based on inappropriate interpretation or application of requirement or standards:

At the LLNL Site 300, which receives 10 inches of rain a year, the State of California closure plans for two landfills required eight feet thick impermeable covers and ten foot wide interceptor drains. The materials of concern are very sparingly water soluble (beryllium and depleted uranium, highly fired as oxides or metal). These requirements unfolded over a two year period of design and redesign that doubled the Total Estimated Cost (TEC) to $3 million. LLNL objected to these requirements but the California State Department of Health Services took the position that these requirements are required under the law.

An area which will eventually impact the Environmental Restoration (ER) program is the imposition of water quality standards by the Colorado Water Quality Commission far in excess of any established drinking water standards. Many of these standards surpass existing technology for their analysis. The long term effect is that these standards will become Applicable or Relevant and Appropriate Requirements (ARARs) for ER remediations and have significant impacts on analytical costs.

Question: Why does the Department feel compelled to negotiate Compliance Agreements for various sites and facilities, particularly in light of changing scientific and technical conditions, and uncertain budget levels?

Answer: The Department negotiates cleanup and compliance agreements with regulatory agencies to (1) establish reasonable and achievable work schedules for complying with environmental requirements; (2) meet requirements for developing agreements under section 120 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) with respect to cleanup activities, albeit within a timeframe that exceeds the requirements of the Act; (3) permit continued operations and waste-handling activities at the Department's facilities during the period in which compliance is achieved; and (4) avoid litigation and the need for related court-imposed orders to correct instances of noncompliance.

By entering into cleanup and compliance agreements, the Department is also able to negotiate on a cooperative basis with Federal and State regulators to minimize potentially inconsistent requirements of Federal and State regulatory schemes; to clarify compliance standards and the activities required to satisfy those standards; to resolve disputes among the regulators concerning statutory and judicial precedence; and to provide the regulators with a fuller understanding of the scope and nature of the waste management and restoration projects at the Department's sites, as well as the Department's commitment to these projects.

Question: How can the Department enter into these agreements knowing they cannot guarantee that Congress will appropriate funds and actual site conditions could significantly change costs and schedules?

Answer: These agreements anticipate that technical and scientific conditions will change and that budget levels are uncertain. They include provisions which allow for amendment or modification to accommodate unforeseen events and technical or scientific advances. Each agreement also includes the proviso that no term shall be interpreted to require the obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. 1341, as amended. In addition, there is an advantage to outlining the required work in a logical manner through schedules and milestones. This aids in preparation of the annual budget request. Without this planning, it would be very difficult to agree on work to be done each year and to accurately predict the cost.

Question: Why has the Department changed it's position and now agreed to EPA fines in the Fernald Case? Is this the Executive Branch policy for one Federal agency to fine another?

Answer: DOE agreed to the assessment of a monetary penalty in the Fernald case, without admitting liability for the assessed penalties, in order to resolve the dispute related to the assessment of stipulated penalties and to concentrate the efforts of the parties on the cleanup challenge posed by the Fernald facility. This does not represent a change in agency position or Executive Branch policy. The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), under which the Fernald cleanup is being conducted, provides for the assessment of penalties against regulated entities, including federal agencies. The dispute which was recently settled in the Fernald Case concerned the interpretation of language which set out the circumstances under which DOE would stipulate that penalties may be assessed.

Hanford Tri-Party Agreement

Question: How do we stand with negotiations related to the Tri-Party Agreement for the cleanup of the Hanford site?

Answer: Negotiations on significant changes to the Tri-Party Agreement are ongoing, and agreement to the Change Package by the Environmental Protection Agency and the State of Washington has been reached. The agreed to TPA Change Package will be presented at public hearings scheduled for the week of June 17, 1991. Currently, three major milestones cover DOE's commitments to investigate and clean up the contamination of soils and groundwater at Hanford. A new strategy for these investigations, the Aggregate Area Management System, has been proposed, and methods of implementing this strategy are currently under negotiation. The new strategy will integrate portions of the investigations across broad areas of the site. The proposal includes provisions for establishing site-wide background analyte values for soil and groundwater, and development of a risk assessment methodology.

Changes are also proposed to the schedules for interim stabilization of single-shell tanks and for characterization of single-shell tank wastes. While the two major milestones for these tasks will remain unchanged, interim milestones for tank stabilization and tank waste characterization are being negotiated.

Hanford Waste Vitrification Facility

Question: Why has DOE changed its position on the delay of Hanford Waste Vitrification (HWVP) facility when the Department had indicated that there were sound technical reasons for a 2-year delay?

Answer: The Tri-Party Agreement requires a formal negotiation process to change milestones. To allow time for the resolution of technical uncertainties, the milestone for starting the construction of HWVP was delayed two years in the FY 1992 Congressional budget submittal. Because of budget deadlines, it was not possible to complete the formal milestone change process with the State prior to the budget submission. This process has now been completed. The agreement has been reached to begin design of the canister storage building in December 1991 and to begin site preparation in April 1992. The canister storage building is physically distinct from the vitrification building and is not the subject of technical uncertainties. Its construction could start as soon as December 1992. This reduces the delay in the start of HWVP construction activity from two years to nine months. Also, construction of the vitrification building will begin if the technical uncertainties are resolved by that time. The start of hot operation would not be delayed and would begin in December 1999 in accordance with the Tri-Party Agreement milestone. The State of Washington has agreed to reconsider the date for the start of construction of the vitrification building and the impact on the date for the start of hot operation when the results of the assessment of technical uncertainties are available in December 1991.

Hanford Waste Budget Impact

Question: Is there any budgetary impact related to this change, and if so, when will the Department be making a request of the additional funds?

Answer: An increase of $43.9 million is required to support the recent agreement between DOE and the State of Washington. DOE is investigating ways to provide funds for this activity in FY 1992.

Environmental Restoration and Waste Management

Question: Update the Committee on any major litigation which is currently affecting your ability to proceed with clean up activities.

Answer: The Department is currently involved in a number of lawsuits that either directly affect activities of the Office of Environmental Restoration and Waste Management, or could result in substantial funding requirements and therefore affect the funds allocated for cleanup activities. A brief summary of the major cases being monitored by my office is provided below:

Litigation continues to affect the Department's plans to accept spent fuel from the Fort St. Vrain reactor in Colorado for storage and use in future research and development (R&D) at the Idaho National Engineering Laboratory (INEL). (Under the planned R&D program, the spent fuel will be used to obtain data of value for reactor design and waste-processing technologies applicable to the development of high-temperature, gas-cooled reactors.) The United States District Court for the District of Idaho recently ruled in favor of the Department and the Public Service Company of Colorado (PSC) and against the State of Idaho by entering an injunction against State interference with PSC shipments of spent fuel to the INEL. The State, however, has filed a separate suit against the Department in the U.S. Court of Appeals for the Ninth Circuit in an effort to prevent the spent fuel shipments, alleging that the DOE has violated the Nuclear Waste Policy Act and other applicable laws and regulations in proposing to receive the spent fuel at the INEL; the Shoshone-Bannock Indian Tribes have joined the State in that lawsuit. The U.S. Court of Appeals for the Ninth Circuit has temporary enjoined the spent fuel shipments until the case is settled.

The DOE is involved in several lawsuits filed by the State of Ohio that address activities conducted at the DOE's Feed Materials Production Center (FMPC) at Fernald, Ohio. One suit involves the extent to which the State can assess penalties and fines against the DOE for violations of the Resource Conservation and Recovery Act and the Clean Water Act. Following a ruling by the U.S. Court of Appeals for the Sixth Circuit that affirmed a decision of U.S. District Court for the Southern District of Ohio that supported the State's position, the DOE filed a petition in February 1991 for review with the U.S. Supreme Court, which recently was granted.

The State of Ohio has filed against the DOE in the U.S. District Court for the Southern District of Ohio to request that the court hold the DOE in contempt for violating provisions of a 1987 Consent Agreement that addresses environmental cleanup and compliance activities at the FMPC. Consistent with the court's direction, the DOE and the State are now in the process of developing an amendment to the 1987 agreement.

Citizen lawsuits also have been filed and are pending against companies that previously held management-and-operating (M&O) contracts with the DOE at: (1) the DOE's Hanford Reservation in Washington, with the case filed in the U.S. District Court for the Eastern District of Washington; (2) the Portsmouth Gaseous Diffusion Plant in Ohio, with the case filed in the U.S. District Court for the Southern District of Ohio; and (3) the Rocky Flats Plant in Colorado, with the case filed in the U.S. District Court for the District of Colorado. The plaintiffs in the cases seek damages and funding for various remedial programs based on alleged injuries resulting from activities conducted at the nuclear facilities.

Two separate suits are also pending involving claims by past and/or present workers at the DOE's FMPC and Rocky Flats Plant. The plaintiffs in these cases seek reimbursement from companies that previously held M&O contracts with the DOE for alleged injuries resulting from the workers' employment at the facilities.

Another lawsuit has been filed in the State of New York to require cleanup activities at the Brookhaven National Laboratory under provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The DOE is one of several "potentially responsible parties" named in the suit. The U.S. District Court for the Eastern District of New York has postponed deciding the case until an ongoing remedial investigation and study of feasible cleanup actions is completed.

In addition, the DOE is involved in a lawsuit filed in the U.S. District Court for the Southern District of Ohio on behalf of the United States by the U.S. Environmental Protection Agency (EPA) to compel "potentially responsible parties" to support CERCLA cleanup activities at a site in Ohio. The site is owned by Reactive Metals, Inc. and formerly was used to conduct certain uranium processing activities in support of the DOE's FMPC. The DOE is in the process of developing a consent agreement with the EPA to address its role and the role of its contractor in the cleanup action.

QUESTIONS SUBMITTED BY SENATOR HATFIELD

Civilian Nuclear Waste

Question: The Administration's National Energy Strategy includes a legislative initiative that would ensure the timely determination of the suitability of the Yucca Mountain candidate repository site. If enacted, would this legislation waive any of DOE's environmental compliance activities or responsibilities?

Answer: The National Energy Strategy would not waive any of DOE's substantive environmental compliance responsibilities. Section 511 of the legislation would allow DOE to conduct site characterization activities under the Nuclear Waste Policy Act without the need to obtain a permit, license, right-of-way or other authorization from a State, Indian Tribe or local government. The legislation would require that Federal agencies administer laws or regulations applicable to site characterization activities without regard to whether administration has been or could be delegated to a State or superseded by a comparable State law. Therefore, while administrative authority with respect to Federal environmental requirements would shift from the State to appropriate agencies within the Federal Government, DOE's substantive obligations would remain the same. Further, DOE would be required, to the maximum extent practicable and in consultation with the Governor of the State of Nevada, to conduct site characterization activities in a manner that minimizes any significant adverse environmental impacts, and to consider the views of State, Tribal and local officials regarding the substantive provisions of their laws.

Question: Could you please provide for the record, an estimated of the amount of dollars, out of the $481 million that was appropriated during fiscal years 1988, 1989, and 1990, which have been wasted due to flawed designs, human error, or any other controllable or uncontrollable events?

Answer: Since 1988, there have been no funds wasted because of flawed designs, human error, or any other controllable or uncontrollable events.

We are aware that a question has been raised about the change in design for the Exploratory Studies Facility (ESF). However, we do not believe that such changes resulted in a waste of funds. Much of the previous design work done on the exploratory shaft facility can be incorporated into the new design efforts. A historical record of the design evolution of the ESF follows.

The Nuclear Waste Policy Act (NWPA), as implemented by the Nuclear Regulatory Commission (NRC) in 10 CFR 60.15(b), required in situ testing at depth. It also originally required the U.S. Department of Energy (DOE) to characterize three sites and recommend one. In 1984, DOE evaluated ramps at Yucca Mountain but elected to develop a two shaft design to maintain similarity with the two other sites then being considered. This decision also kept the facility as small as possible to avoid any misperception that repository construction had started.

Following the amendment of the NWPA, DOE issued and received comments on a draft Site Characterization Plan (SCP). A statutory SCP was issued in December 1988. DOE completed Title I Design of the Exploratory Studies Facility (ESF) to accompany the statutory SCP. DOE began preparation of Title I Design in 1988, and at that same time began the process of resolution of NRC objections to the SCP and to interact with the newly-created Nuclear Waste Technical Review Board. These interactions suggested the advisability of reconsideration of mechanical excavation of a ramp. NRC concerns clearly suggested the need for more extensive excavation and testing. These issues were addressed in the ESF Alternatives Study. DOE will issue a revised Title I Design Summary Report; portions of the existing Title I Design are still usable (e.g., surface facility design, road design, regulatory compliance strategies) and will be reflected in this revision. The Design Concept also includes the design of an optional future testing shaft. Because previous design efforts will be incorporated where applicable, the activities associated with the design concept can be completed sooner than would have been otherwise possible. In addition, most of the design requirements and virtually all of the procedures remain unchanged.

Question: It appears to me that much of this waste could have been avoided by more careful technical review and that additional expense and project delays would not have to occur. It has been suggested to me that one solution to this problem would be for DOE to fund a state-level, independent technical review group for the high-level waste program, similar to the New Mexico Environmental Evaluation Group which focuses on the Waste Isolation Pilot Project. Have you considered the creation of such a technical review group?

Answer: The high-level waste program is subject to extensive technical overview from the Nuclear Regulatory Commission, the Nuclear Waste Technical Review Board, the Edison Electric Institute, and from within DOE. In addition, the project already has extensive oversight from the State of Nevada. With all of the oversight already being provided, DOE sees no need or advantage to establishing another independent technical review group.

The Nuclear Waste Policy Act and Amendments specify that funds be provided to the State of Nevada and some local governments for independent studies and review of the program. DOE interacts formally and informally with State and local agencies and various groups. Three agencies have been created by the State of Nevada to conduct repository-related activities for the State:

- The Nevada Commission on Nuclear Projects is charged with advising the Governor and the Nevada Legislature on nuclear waste matters and making recommendations on State policy.

- The Nevada Agency for Nuclear Projects/Nuclear Waste Project Office is responsible for all State oversight of the high-level nuclear waste program and for carrying out Nevada's responsibilities under the Nuclear Waste Policy Act. It produces technical reports, public information materials, and studies in geotechnical, environmental, socioeconomic, and transportation areas.

- The Nevada Legislature's Committee on High-Level Radioactive Waste is a seven-member oversight panel of Senate and Assembly members.

In addition, the Nevada Local Government Planning Group is an informal body of representatives from local governments and Indian Tribes organized to keep local governments informed about repository issues. Organized in 1983, it is chaired by the Nevada Agency for Nuclear Projects.

Question: There is significant concern that, given the problems that DOE has encountered from the State of Nevada in securing the necessary environmental permits, the Department cannot possibly spend the full amount that has been requested for the repository program in the FY 1992 budget. What is your response to this criticism?

Answer: Of the $172.2 million requested for the repository program in FY 1992, only $7.0 million is for activities which require environmental permits. These activities are the trenching in Midway Valley to study surface faults for the seismic design of the surface facilities and the deepening of Trench 14 to study the origin of calcite-silica deposits. The remaining repository activities, totalling $165.2 million, do not require environmental permits.

Question: Please provide for the Subcommittee an exact accounting of the dollar amounts in your budget request which can be spent regardless of the issuance of any of the necessary permits from the State of Nevada.

Answer: Of the $172.2 million requested for the repository program, $165.2 million is for activities which do not require environmental permits. The activities and the respective funding levels are provided in the following table:

Repository Activities
Not Requiring Permits
Planned Expenditures for FY 1992
(in thousands of dollars)

Systems Engineering	10,000
Waste Package Design	2,000
Site Investigations	37,200
Repository Design	8,032
Regulatory/Institutional	20,229
Exploratory Shaft Design	24,400
Test Facilities	7,000
Project Management *	43,380
Financial/Technical Assistance	13,000
Total	165,241

* Includes project control and quality assurance

Question: I am concerned about the conclusions that one of your geologists, Mr. Jerry Szymanski, has reached regarding the historical rise in the water table level at Yucca Mountain. When do you expect to ascertain the validity of Mr. Szymanski's work?

Answer: Mr. Szymanski's model, which postulates that the water table could rise as a result of tectonic processes and possibly threaten the integrity of the repository, has been reviewed extensively by DOE and other agencies. Additional reviews sponsored by DOE and the National Academy of Sciences (NAS) are currently in progress. DOE review of the first draft of Szymanski's report involved approximately 30 senior scientists from the participants in the project (U.S. Geological Survey, Sandia National Laboratory, Los Alamos National Laboratories and Science Applications International Corporation). The reviewers concluded that some of the physical processes proposed were similar to those known to operate in the earth's crust, but the reviewers did not agree that the magnitude of potential water table rises was sufficient to constitute a credible threat to a repository. Further, the review panel found that the geologic data cited by Mr. Szymanski did not support his interpretations, and concluded that the planned testing program in DOE's site characterization plan would provide the information necessary to completely resolve the issue. Reviews of Mr. Szymanski's first draft by the State of Nevada (never officially released) and the Nuclear Regulatory Commission reached conclusions similar to DOE.

Following the project review, Mr. Szymanski revised his report and released a 911-page revision in July 1989. That report, and other materials produced by Mr. Szymanski since that date, are currently under review by two groups. The first panel, which began its review in February 1990, includes five scientists retained by DOE, three selected by Carl Gertz, the Yucca Mountain Site Characterization Project Manager, and two selected by Mr. Szymanski. The final report of these reviewers is anticipated in late June 1991. In addition, DOE requested that the National Academy of Sciences review the models proposed by Mr. Szymanski.

In response, the NAS formed a panel consisting of 17 highly qualified scientists in numerous disciplines. DOE has cooperated with the independent NAS review panel by attending numerous meetings and conducting field trips with both Mr. Szymanski and other project scientists. A final report from the NAS is expected in late 1991, or early 1992.

DOE anticipates that a final determination concerning the validity of Mr. Szymanski's work, and its effect on future project plans, will be made following the completion of the two currently ongoing reviews. It should be noted that the Nuclear Regulatory Commission and the presidentially-appointed Nuclear Waste Technical Review Board, which are familiar with Mr. Szymanski's models although they have not formally reviewed his reports, have both testified to Congress that there is no scientific reason to abandon the Yucca Mountain site given current data.

Of course, the ultimate resolution of technical questions regarding the Yucca Mountain site will only be possible when the Department is permitted to complete its planned site characterization effort, including the drilling of additional boreholes, and the development of an underground testing facility.

The Environmental and Molecular Sciences Laboratory

Question: Can you describe the linkages that have been developed between Pacific Northwest Laboratory and other research institutions throughout the country in developing the scientific basis for technologies that will be useful for environmental remediation?

Answer: No formal linkages have been established for the Environmental and Molecular Sciences Laboratory (EMSL) at this time.

The EMSL was originally conceived by the DOE Office of Energy Research to conduct basic research on fundamental molecular processes. Line management responsibility for the EMSL project was transferred to the DOE Office of Environmental Restoration and Waste Management (EM) during the FY 1991 internal budget review process.

The EMSL is being redesigned to conduct applications/needs-oriented (rather than basic) research in the environmental sciences. Redesign will help the EMSL to become a more effective tool in addressing unresolved facility cleanup and environmental compliance problems.

Once redesigned, the EMSL will be operated as a premier DOE/user facility for the environmental sciences community. The EMSL will serve as a focal point for cooperation and collaboration among DOE National Laboratories, academia, and industry. In addition, it will provide hands-on training to new scientists and engineers in the fields of environmental assessment and remediation.

Question: What provisions does DOE have for making available equipment and instruments in a laboratory such as EMSL to industrial and university users who are interested in participating in research that requires instrumentation that is not available at their home campus?

Answer: The facilities of the EMSL will be available to researchers from industry, academia, and international partners. It is anticipated that sabbatical arrangements will be made on a competitive basis for researchers to work on DOE projects. Concepts such as the Loaned Executive Program need to be reviewed and approved by DOE and authorized by the Office of Management and Budget before researchers can pay their own way to work at EMSL or other DOE facilities.

Question: Will the EMSL be available to all members of the research community, including foreign-born graduate students, who are increasing in number not only in the Northwest, but throughout the country?

Answer: Yes. The Environmental and Molecular Sciences Laboratory (EMSL) will be available to all members of the research community, regardless of their nationality. Unlike many DOE facilities, the EMSL will be operated as an unclassified facility. This will allow greater accessibility by the Nation's environmental sciences community.

Question: How will EMSL's computational equipment tie into the High-Performance Computing Initiative that is being funded by the Department of Energy?

Answer: The original computer equipment requirements are being reviewed to conform with the EMSL's new environmental cleanup mission. The computer requirements for the EMSL will be determined by the redesign efforts currently underway. The automated data processing needs of the redesigned EMSL will be integrated with the overall DOE capabilities.

Hanford Tri-Party Agreement

Question: In your written testimony which was provided to the Subcommittee prior to the hearing, I do not believe that you mentioned the fact that DOE, the State of Washington, and EPA have been in negotiations over potential changes to the Hanford Tri-Party Agreement. It is my understanding that those negotiations were concluded just last night. Please provide the Subcommittee the results of those negotiations.

Answer: On May 15, 1991, the three parties successfully reached agreement on changes to technical issues and new work including the addition of several major and interim milestones. DOE will also implement a management control system for Agreement activities by October 1991. Other changes include the development of more detailed funding provisions and requirements for EPA and State involvement in the development of cost estimates for agreement activities; commitments for additional funding for the waste vitrification plant; studies on alternative pretreatment of wastes; and an integrated Hanford site laboratory capacity study which will assess analytical needs and Hanford's capability of evaluating tank core samples and other samples containing high levels of radioactivity. In addition, the parties agreed in the negotiations that DOE's liquid discharges at Hanford should be placed under the independent regulation of the State's waste water permitting program. EPA's Superfund authority is also being used to regulate these streams.

Hanford Waste Vitrification Project

Question: I understand that the negotiations concluded with an agreement on Mr. Duffy's part for a $43.9 million increase for activities associated with the vitrification facility. Is this correct?

Answer: The negotiations did not promise an "increase" but rather a redistribution from within existing funds to accommodate the agreement. The majority of the funding is for activities associated with the vitrification facility, including canister storage building design, site preparation, and long-lead procurement. A small portion, $1.7 million, was earmarked for the design of new waste tanks. The start of site preparation will be delayed nine months to April 1992. The schedule of December 1999 for hot startup, in accordance with the TPA milestone, will be maintained pending the results of the assessment of technical uncertainties to be completed in December 1991.

Question: Please describe how the $43.9 million will be spent.

Answer: The agreement between the Department of Energy and the State of Washington, Department of Ecology, is as follows:

Canister Storage Facility	$14.6 million
Storage Tanks	1.7
HWVP Site Preparation	10.0
Long-lead Materials Procurement	17.6
TOTAL	$43.9 million

Question: Has the "hot start" date of 1999 for HWVP changed?

Answer: No; the "hot start" date of December 1999 for HWVP has not changed. The TPA milestone will be maintained at December 1999 pending the results of the assessment of technical uncertainties to be completed in December 1991.

Question: What additional fiscal impacts are included in the final package with respect to the other milestone revisions?

Answer: We are still assessing the fiscal impacts of the Tri-Party Agreement milestone changes on the FY 1992 and the outyear budgets.

Question: What is the total funding level in your FY 1992 budget request for HWVP?

Answer: The total funding request for HWVP in the FY 1992 budget submitted to Congress in February 1991 is $61.3 million.

Question: Please provide a complete description of how these requested funds will be spent.

Answer: The requested $61.3 million will be used to complete a systems engineering risk assessment to identify and quantify technical uncertainties; complete the re-examination of waste pretreatment/vitrification requirements; begin long-lead procurements; continue quality assurance activities; support melter tests in cooperation with the Federal Republic of Germany; continue technology transfer from the Defense Waste Processing Facility at the Savannah River Site; and continue the detailed design of HWVP.

Waste Characterization and Safety Efforts at Hanford

Question: Are there sufficient funds in your FY 1992 budget request for Hanford storage tank waste characterization and safety efforts? If not, what additional level of funding is required?

Answer: The Hanford tank farms safety and upgrade program is still under development. The Department and the Westinghouse Hanford Company have recently established new management teams to take responsibility for identifying and resolving the safety issues, and to make the necessary improvements to the aging tank farms. Near-term actions to resolve the high-priority safety issues are being actively pursued using funds originally designated for other waste management activities. The program is still evolving in order to address other safety issues and upgrade needs. The Department will be finalizing the safety and upgrade programs in June 1991 and will be working to identify funding needs and possible sources of funding for these high-priority activities.

Characterization of the Hanford high-level waste is required for three different purposes: safety, pretreatment, and environmental restoration. Current emphasis is on obtaining data necessary to understand the priority safety issues for their resolution, and the Department is reviewing its FY 1991 budget to ensure that there is adequate funding for their activities to support the safety program. Concurrently, Hanford is developing an integrated program to characterize the waste in order to maximize the efficiency of the resource intensive sampling and laboratory analysis efforts. Development of the integrated waste characterization will involve the U.S. Environmental Protection Agency and the State of Washington. Among the different EM programs, the Department believes there are sufficient funds being requested for the characterization program in FY 1992.

Rehabilitating the B-Plant

Question: Where does the Department stand at this point in time on the proposal to rehabilitate the B-Plant for waste pretreatment activities associated with HWVP?

Answer: The Department is currently performing studies to assess the feasibility of using B-Plant as well as other alternate pretreatment facility options. The results of these studies are scheduled to be issued in December 1991. While these studies are proceeding, the Department has suspended all B-Plant upgrades designed solely to prepare B-Plant for the pretreatment mission.

B-Plant Cost-Effectiveness

Question: Does the Department believe that B-Plant can be rehabilitated cost-effectively and in such a way that it can meet all Federal and State safety and environmental regulations?

Answer: The Department will not operate B-Plant for pretreatment unless it meets all Federal and State safety and environmental regulations. Sufficient data do not presently exist to determine if B-Plant can be rehabilitated cost-effectively to meet those standards. Studies involving key safety and environmental issues are to be completed in December 1991.

PUREX Plant Transfer

Question: The Senate Report accompanying the FY 1991 Energy and Water Development Appropriations Bill contained language preventing the transfer of the PUREX plant from Materials Production to Waste Management. Last October, Secretary Watkins announced that PUREX, which had been closed subsequent to an accident at the facility, would not be reopened for any purpose (for materials production or waste management) until the completion of an EIS. Subsequently, I was notified of the Department's interest in the transferring of the funding of the PUREX facility from Materials Production to Waste Management - which is currently reflected in the FY 1992 budget request. What is the status of the EIS?

Answer: The Notice of Intent on preparation of the Environmental Impact Statement has been forwarded to DOE Headquarters and is currently undergoing review prior to submission for publication in the Federal Register. The Record of Decision is expected in FY 1993.

PUREX Plant

Question: According to the Department's FY 1992 budget request, the Department proposes to transfer funding for PUREX from Materials Production to Waste Management, and is proposing to maintain PUREX as part of a "standby Nuclear Materials Production Program" facility (P. 464). How can this decision be made before completion of the EIS?

Answer: The decision to transfer the facility is consistent with current plans to maintain PUREX in a standby condition pending the completion of an Environmental Impact Statement (EIS) concerning the disposition of the Hanford irradiated fuels. The facility is being maintained in a standby condition for the Environmental Restoration and Waste Management Program as a fuel disposition option for the EIS because of PUREX's unique capability to convert the irradiated fuel into a form suitable for long term storage.

PUREX Funds

Question: If PUREX is to be maintained as a Nuclear Materials Production facility, should not the funds be transferred back to Materials Production?

Answer: PUREX is not being maintained as a Nuclear Material Production facility. PUREX is being maintained in a standby condition to maintain it's viability as a fuel disposition option associated with preparation of the Environmental Impact Statement on disposition of Hanford irradiated fuels. There are no plans to use PUREX as a Nuclear Materials Production facility.

N-Reactor Funding

Question: I am also disturbed by your FY 1992 request under Waste Management for $42.5 million as a "pass-through" to Defense Programs for the N-Reactor. This looks like a blatant example of "padding" the Waste Management budget with Defense Programs expenditures. If this is still in Defense Programs jurisdiction, shouldn't it be funded directly out of Defense Programs?

Answer: At the time of the FY 1992 budget submission, N-Reactor was scheduled for transfer to the Office of Environmental Restoration and Waste Management for Decontamination and Decommissioning preparation because no further operation of the N-Reactor in support of Defense Programs was planned. The Department is currently reviewing the appropriate timing for this transfer.

Hanford Tri-Party Agreement Milestones

Question: Your interpretation of the events surrounding the recently concluded negotiations over the revised milestones in the Hanford Tri-Party Agreement are certainly different from mine. Is it not true that it took the Department the better part of a year to begin the negotiations, and wasn't the State of Washington the party which insisted on the milestone changes?

Answer: A number of technical and safety issues associated with the waste tank treatment, storage, and disposal have arisen in the last year. These issues have had a direct impact on several key milestones in the Tri-Party Agreement. The State of Washington, the Environmental Protection Agency and the DOE have recognized for some time that resolution of these issues would potentially require changes to the milestones.

Although it would have been desirable to submit and resolve these change requests prior to February 1991, the complexity of the issues and the amount of time to address them prevented an earlier meaningful submission.

After analyzing these complex issues and the associated impacts to the TPA milestones, DOE submitted the changes in February 1991. DOE, EPA, and the State of Washington have recently concluded negotiations on these changes. These negotiations affirmed the complexity of the issues and the requirement that long-term enforceable milestones must have a sound technical basis.

CONCLUSION OF HEARINGS

Senator **JOHNSTON**. Thank you very much, gentlemen, for your testimony. That concludes the hearings. The subcommittee will recess and reconvene at the call of the Chair.

[Whereupon, at 3 p.m., Thursday, May 16, the hearings were concluded and the subcommittee was recessed, to reconvene subject to the call of the Chair.]

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